COLUMBIA
UNIVERSITY QUARTERLY

VOL. XVIII MARCH, 1916 No. 2

# IN LVMINE TVO VIDEBIMVS LVMEN

Huc ades, Lux increata,
Gentibus desiderata,
Lux vitae signifera;
Almam Matrem tu sustentes,
In tenebris quae sedentes
Erigat lucifera.

Haec tuo subter vexillo
Impleat vultu tranquillo
Munera scientiae;
Pax florescat, fraus marcescat,
Hac docente semper crescat
Robur innocentiae.

Huius nos amore vincti,
Ampliore spe instincti,
Consulamus patriae;
Ius tuentem confirmemus,
Fas verentem consecremus
Carae vi Columbiae.

Sic vigescet veri testis
Civitas Dei terrestris
Sancto plena numine;
Sic laborum nos securos
Lumen diriges visuros
In tuopte lumine.

NELSON GLENN McCREA

# TWO AMERICAN HISTORIANS*

## I. Charles Francis Adams

CHARLES FRANCIS ADAMS, fourth in descent from President John Adams through President John Quincy Adams and a scarcely less famous sire of his own name, died in his eighty-first year, a young man to the end. He was soldier, financier and historian, consumed by zeal in each of his successive vocations. Of our company he had been a member for many years. Unanimously chosen as a representative historian, he was active in the enterprises of the Academy, making public appearances of dramatic power, and generous in his support of its ventures. His personality was altogether sympathetic among us. The members of other bodies, personal friends of longer standing than most of us, have described him in their public tributes as brusque and positive yet open minded and receptive, an aristocrat by temper and a democrat in conduct, as alike an iconoclast and a conservative, in short as the embodiment of paradox, physical and mental. Doubtless, in one sphere of his activities and during the years of combat, he so appeared and so was. Much too depended on the temper of his associates, who all unconsciously may have presented a similar front to him. He was a doughty gladiator in the cause of righteousness, and had a heavy fist where dishonesty in affairs lurked behind fine phrases and slimy euphemisms. While in a high degree endowed with insight, while his vision of the goal was always clear and while his reasoning processes made him in many instances prophetic, he was really a warrior. He loved the joy of battle even more than conquest. The weapons of his concrete knowledge and ruthless logic were not unfair and never foully wielded, but they were unsparing. With gallant, honest foes he was even chivalrous. It was not safe to menace him with precedent, or the ethos of history, or the lessons of experience. He was sure to have interpretations of his own which were alike novel and founded on unsuspected aspects of familiar facts. Authority was for him no thunderbolt, but rather a flickering, dancing will-o'the-wisp.

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* These addresses were delivered at the regular meeting of the American Academy of Arts and Letters on December 9, 1915.

This temper he manifested as an officer of the line in the Civil War, as a student and director of railways and systems of transportation, as an advocate of radical changes in the higher education given by American universities, and, what concerns us most as his colleagues of Institute and Academy, in his treatment of history as a human discipline. Among us he was always suave and genial, as befitted a recognized personage. For many years of his later life his home was Washington; and in the national society, embracing men and women from all sections and of all ages, he found a flattering recognition as a sage which calmed his spirit and softened his manners. But in matters of history he was a knight-errant to the last. He regretted the discovery of America as having occurred a century too soon; he discredited the veracity of the enthroned divinities of history from Herodotus onward; the accepted view of Washington as a strategist of the first order he sedulously attacked; he was an advocate of States rights and supported the project for a monument to Lee in the national capitol. His attitude as a historian was preëminently that of the doubter and the iconoclast. It has been said of Voltaire that he transformed the writing of history by the sheer force of doubt. In the present era of modern and radical reconstruction Mr. Adams made his many readers keen and alert, even if he could not always command conviction.

His completed works are embraced in some eleven volumes. In a sense he was a writer of pamphlets and miscellanies; but from first to last there is a unity of style and purpose, whether the theme be ancient, modern or contemporary, social, economic, or political. His diction is rugged and polished by turns, but always a style, readable and reasoned. The contents are uneven in value, but everywhere you find something worth while. For him there was all round about a turbulent, living, throbbing world, little concerned with academic standards of form and fashion, indifferent to culture, hardfisted and selfish. The morals of such a world were more gristle than bone and needed hardening. And so he was a teacher of ethics, not of the chair and school, but of the lawgiver. He writes magisterially, he enforces judicially, and he flays like the judges in the gate.

That he wielded power as an historian is beyond all peradventure, but it was not because of his style. His title to a high place rests on his untiring industry as an investigator. For drudgery he had both capacity and respect, since without the ceaseless murmur of the treadmill no power can be generated. In biography he excelled; the lives of his father and of Richard Henry Dana are materpieces of composition and vivid description. His lectures delivered at Oxford and published as the last volume of his series are a fine performance of daring, didactic controversy. While he had a certain British cast to his Americanism, he never forgot, and did not entirely forgive, the treatment to which his country was subjected by official and social England during the Civil War. It was bold, though not overbold, to instruct, to warn and to correct the descendants of the sires who had so wrought, within the threshhold of their own house. The University, aware of his sincerity and impartial in their own judgments, bestowed on him their highest honor but one, the degree of Doctor of Letters.

The visit was particularly fruitful in that like a mole he burrowed among the tap-roots of historical knowledge; viz., the private papers put at his disposal by the families whose progenitors had made English and American history. Nothing daunted him, age had neither withered nor staled him, and the leads which he opened he and his highly prized friend, Mr. Worthington C. Ford, most industriously worked, bringing a wealth of rich ore to be assayed in America. He may be said to have retained undiminished energy to the very end of his long and strenuous life. While his independence of character, his unflinching treatment of public questions, and his proud consciousness of inherited obligations, forbade any close organic connection with party machinery, he was nevertheless a statesman, an elder councillor in politics. His advice when sought was freely given, and when not sought was proclaimed in such ways as to secure general attention from the intelligent public. Legislators were powerfully influenced by it.

He was therefore in some sense a maker of history as well as a writer of it. His nature was eminently social; he frequented private dinners and receptions and was always in evidence; he talked abundantly and listened attentively. Again and again he declared that no platform was better than that of a great public banquet, and as an after-dinner speaker he made addresses which were always weighty with thought. His intimate friends were proud and happy in his society and confidences, for he was alike witty and humorous. Like the monk of mediaeval fable whose name was "Give," he found comrades entitled "It shall be given"; and with all the gravity of his nature, the seriousness of his purpose, and the occasional frostiness of his address, he enjoyed life to the full, as few have done. It is a pleasant duty to commemorate his work and his stimulus in this association.

## II. ALFRED THAYER MAHAN

Alfred Thayer Mahan died last year at the age of seventy-four. Deriving in family, training, and confession, from the old New York, his ancestry was notable. He was born at West Point, where his father, a learned engineer of high repute, was then professor. His career from his student days at Columbia University and Annapolis onward to his fiftieth year was that of a faithful, painstaking officer and Christian gentleman of the Anglican mold. In 1883 he had published an admirable professional study entitled "The Gulf and Inland Waters"; and two years later he was made lecturer on naval history and strategy at the Naval War College in Newport. Upon his duties as teacher he entered with the fitness due to university education and professional discipline. Five years later was published "The Influence of Sea Power on History." During the twenty-three years following he published no fewer than seventeen pieces of important historical work, short and long, making a total of nineteen titles to his credit.

His biographies of Farragut and Nelson, as well as the finely studied bit of autobiography entitled "From Sail to Steam," are all works of the highest importance. They exhibit the mind and style of the author with great clarity because none of them is abstract, metaphysical or controversial. Furthermore they display the man as his mind worked without artificial stimulus and naturally expressed itself in language. There is the patient, unwearying search for truth, for he had trained himself both in archival study and in the comparative method of establishing facts; there is his characteristic insight and grasp of meaning, for he was essentially a moralist and interpreter; there is his plain dealing and lucid style. While he was a man of letters, he held his constructive imagination in firm control, a handmaiden and not a mistress. It was the affair of his readers to supply the element of fancy, if they chose so to do. To the landsman the ocean is a favorite field for the play of that faculty, and readers gave it full scope under the stimulus of his suggestions.

It has been the function of certain American historians to exhibit the hidden meanings of their past to European peoples. Among these Admiral Mahan was easily a chief. Were we to reckon the greatness of historical work by its contemporary influence, his would be a reputation which in the long list of modern historians in all lands cannot be exactly paralleled. Behind the historian was the man, a devout and orthodox Christian, with a strain of mysticism, inquiring into the divine purposes as revealed in the course of human events. Among all forms of this transcendent power in action the sailor historian magnified that exhibited by national effort on the high seas. His epochal work, for it was nothing less, is contained in his series of six volumes on Sea Power, embracing substantially the historical ages in their entirety. Each people and each age was carefully examined in its relative importance; and naturally the older lands, entering on the portentous struggle to maintain territories and prestige, were more profoundly interested than the newer, his own included.

While therefore it cannot be said that he failed to secure from Americans the due meed of honor, yet it was beyond the seas that he was revered and admired with a passionate intensity never fully apprehended in his own country. When in 1902 he was President of the American Historical Association, the theme of his presidential address was "Subordination in Historical Treatment" and his exposition related his own method in emphasizing the central elements of his thought as a historian. So successful was he in his Sea Power books that his message was a revelation to Europe generally and Great Britain particularly. Within a single year both Oxford and Cambridge bestowed upon him their highest honors. The advocates of the Greater England and the Three Power Standard found in him their prophet and in his studies their justification. As the volumes appeared they were in whole or in part translated into the leading European languages and carefully edited excerpts were the text-books for naval expansion. That the ocean, so far from being the barrier it had been considered, was in reality the great highway, the all-inviting menstruum of isolation, burst as a fact upon the consciousness of Europe like a convulsion of nature.

To be sure, the stresses of expansion were already powerful in international politics, and the European world was beginning to groan in spirit over problems entailed by material prosperity and the growth of population. The forces of nature were being harnessed for the multiplication indefinitely of human industry and inflation of wealth. Statesmen were sorely in need of pretexts for armament, and they seized for a corner-stone of their policy upon the fact ruthlessly exposed by the American historian that Nelson, rather than Wellington, had worn away to innocuous and tenuous inefficiency the portentous power of Napoleon. The ears which heard alike in England and in Germany were only too receptive, the grasp of national understandings only too swift, and the subsequent activities only too mischievous. But we must not fall into the baneful fallacy of sequence as proving cause and effect. Secular history is not the record of human utopias, and what it reveals is not the dealings of regenerate mankind. Unvarnished truth is the characteristic of Mahan's pages, the truth fairly stated and philosophically considered. For him it was no counsel of perfection; it was an exhibition of how unstable is the equilibrium in the nice balance of political powers. His work, dispassionately considered, has neither charm nor seduction; in a high degree it is a caution against danger, a warning against false interpretations of facts. That self-seekers should abuse it is, alas! the way of the world.

Speaking from frequent contact with Admiral Mahan throughout many years of pleasant acquaintance, the writer must enter a protest against the charge that he was at any time, in conversation or in his writings, an apostle of war. So far from that, he was preeminently an apostle of peace. It is a sacrilege to distort the general tendency of a life work by false emphasis on particulars. He did not write primarily for others, because, great as he was in other respects, he was greatest as an American, and the lesson he taught was intended for American patriots. He advocated a powerful fleet and battleships of great size, but solely for the safety and dignity of the land which was dear to him and to protect against violence a pacific evolution of the civilization he believed to be the highest. Knowing the genius of peoples as few others did, he realized the passions, ambitions and unprincipled purposes of contemporary nationalities, the shiftiness of policies, the flimsiness of alliances and treaties, the lust for glory, for wealth and for power. He had marked how the embittered hates of one generation were swiftly transformed into the fawning flatterings of the next and how readjustment of understandings occurs in the twinkling of an eye when common material advantage imperiously commands it. Fully aware of such appalling truths, and sensitive to his own convictions about Sea Power, he desired his country to be on its guard against empty protestations of affection and shallow pretenses of aloofness.

It was good to know a man of such elevated character, to hear his fascinating talk, to enjoy his courtesy and to delight the eyes with his fine appearance. Tall, slender, erect, with expressive blue eyes and a clear complexion, he was moderate and modest in his intercourse with men, though heartless and often unsparing in the defense of his principles. He was mindful of his duties great and small, meticulous in his attention to obligations he had accepted, and so in our company a genial, appreciative comrade. From all notoriety and self-display he shrank, and during his years of membership in the Institute and Academy there was never a time when he was in evidence to the degree of his eminence in the great world. As the perspective of time lengthens, our devotion to his memory is likely to increase. The trusted adviser of the government, he died in Washington with all his armor as a patriot on, with faculties keen and alert. The awful convulsions of the hour had justified his interpretations of Sea Power, but I have heard that they had likewise filled him with consternation lest as a result, deferred perhaps, yet probable, the political map of America might eventually be as completely remade as that of Europe.

William Milligan Sloane

# THE UNIVERSITY A MEMORIAL TO MEN*

IT is not inappropriate that there should be read as our lesson today this roster of the great men of faith (Hebrews 11); for the seeker of truth and teacher of knowledge is also a man of faith. He has faith that truth is to be found by honest and patient inquiry. He has faith that humanity is to be led upward and onward by the dissemination of truth. He has faith that his own life is well spent in such service, though he himself may never reach the goal of discovery or ever see the harvest of his planting. But it is not merely because of this emphasis on the achievements of faith that the lesson read is appropriate. It teaches also that these lives of faith have entered into the very structure of the church, to whose service they were devoted, and that the institution itself has thereby become a memorial to them. No less is this true of those who have spent their lives in the service of such an institution as our own university. It is upon this subject, the University a Memorial to Men, that I would have you reflect this afternoon.

The University *is* a memorial to men. For those of our colleagues who during this year have passed from among us to the last great experience of life, it stands as the greatest and most enduring memorial which the heart of man could desire. Sooner or later it will be a memorial to those of us who yet remain to finish the outline or fill in the detail of our contribution to its lasting structure.

The University is a memorial to men in the scope of truth and the variety of human interests which it embodies. Of the University, the great contribution of the Middle Ages to truth, it may be said as truly as it has been said of the Gothic cathedral, that epoch's great contribution to beauty:

"Not only is there built into it the accumulated thought of all the men who had occupied themselves with building during the preceding centuries . . . but you have the dream and aspiration of the bishop who designed it, of all his clergy who took an interest in it, of the master-mason who was skilled in construction, of the carver, the painter, the glazier, of the host of men who, each in his own craft, knew all that had been done before them, and had spent their lives in struggling to surpass the work of their forefathers. . . . You may wander in such a building for weeks or for months together and never know it all. A thought or a motive peeps out through every joint, and is manifest in every moulding, and the very stones speak to you with a voice as clear and as easily understood as the words of the poet or the teaching of the historian."

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* Delivered in St. Paul's Chapel, December 12, 1915, as the annual address commemorating those officers and students who have died during the year.

Even so are the results of the life-long labor of the seekers of truth in all ages built into the structure of the university. The churchmen and the statesmen whose wisdom saw clearly the necessity of that support which is given only by breadth of knowledge, and the philosophers who labored for the love of knowledge in itself have contributed the designs. The great discoverers of the ages who have taught us in human terms the plans of the universe, the movements of the planets and the forces which hold them in their orbits; who have taught us how living forms have come to be what they are, the laws of life and of growth; who have revealed to men the laws concerning their own welfare in their dealings one with another, the principles they have blindly sought for but unaided have not been able to see,—all these have helped in building the structure. The investigator of the smallest of nature's secrets or the lowliest of man's needs has often contributed something now essential to the stability of the whole. The teacher who has inspired the soul of hero or martyr, small or great, or inflamed the zeal of youth to endeavor and sacrifice, no matter how humble, has added adornment which beautifies the whole. It is the life work of the entire body of truth-seekers and truth-tellers of each generation which materializes these designs for the youth of their own times. Not otherwise does the University exist. They are the buttresses, the joints, the mouldings, the very stones which speak to us "in the words of the poet and the teaching of the historian."

Thus the University differs from our other social institutions in that the effort of each worker leaves a permanent and distinguishable contribution to the whole. In the isolated portions of the old cathedral, its chapels, its altars, its mausoleums, its carvings, its paintings, artist may have added to artist and workman to workman; generations may have passed in erecting the structure and every clime have contributed to its adornment. Yet the work of each artist stands as a definite addition and is distinguishable to the seeing eye. Giotto may have designed the "vaulted book" of the Spanish Chapel; the Gaddis of two generations drawn the outlines and laid on the first stiff colorings; the Memmis executed the glorious symbolic expression of the entire spiritual and thought life of the Middle Ages found therein. Craftsmen and artists of subsequent generations may have restored and retouched to keep the message alive. But the beauty of the whole is one and yet remains to tell us on its four walls, more plainly than if written in any book, the aspirations, the hopes, the fears, the imperishable sense of beauty, and the triumphant faith of those generations. It may now take the genius of a Ruskin to decipher the unified product and to attribute to each laborer his due share of the revelation. But it can be done, and in line or feature, coloring or expression, the personal stamp is recognized. The personality of the artist lives again in the emotion of the student or the devotion of the worshiper.

So it is also with the university. Language and literature, science and art, may be unified wholes, but what the student carries away is the method of this investigator, the ideas of that scientist, the life interpretation of this instructor, the inspiration of that teacher. When he is under the spell of its influence, the University appeals to him only through personalities. When these influences merge into the blend of character, this still consists of the influence of personalities, though no longer distinguishable into its components. The whole has become the personality of the University itself. We may not always be able to recognize our indebtedness to individual teachers so clearly as did Aurelius, the imperial philosopher. "From Diogenes I learned not to busy myself about trifling things. . . . From Rusticus that my character required improvement and discipline. . . . From Apollonius I learned freedom of the will and undeviating steadfastness of purpose. . . .

From Sextus, a benevolent disposition. . . . From Alexander the grammarian, to refrain from fault-finding. . . . From Fronto I learned to observe what envy and duplicity and hypocrisy are in a tyrant. . . . From Severus, to love truth and to love justice. . . . From Maximus I learned self-government and not to be led aside by anything. . . . To the gods I am indebted that I know Apollonius, Rusticus, Maximus, and that I received clear and frequent instruction about living according to nature and what kind of life that is."

The total influence is there, even though it escapes such analysis. It constitutes the university and it is the work of men. Perhaps those who have contributed may be long forgotten. Perhaps, as with the Book which has been the inspiration of so many generations, bard may have sung the folk lore of the people, chronicler recorded in permanent form the traditions of the bard, prophet added the inspiration of religious and moral teaching, and priest the forms of righteous living and its meaning in terms of worship. So with the University in its whole and in its parts: one generation adds its interpretation to another; bard and chronicler, editor, priest, and prophet must all do their work, that finally the message may receive an imperishable embodiment.

The student of today may not know the real source of his guidance and inspiration; the teacher himself may not always know the discoverer of the truth which he imparts. But out of the past, because of the devotion and labors of men, truth has grown and the university has developed. In guiding its multitudes of students and in exerting its influence on our common life, it becomes and remains a memorial to its devotees of the past, to those who departing bequeathed to their immortal Alma Mater not only all that they had received, but also all that by labor and devotion they had added to their heritage.

Again, the University is a memorial to men in the multiplicity of its appeals and the breadth of its influence. Prejudices of race or of sect or of class have little place within its walls. Unity of life consists not in uniformity, but in the organization of reciprocal influences, in cooperation of unlikes. In no social institution is this better illustrated than in the University. Its abilities, its interests, its needs, are as diverse as the instruments of an orchestra; its activities as varied as the musical progressions. Its achievements are as essential parts of a unified developing whole as are the harmonies of the symphony. This diversity in unity has been peculiarly marked in Columbia. It is significant that in the first body of trustees were included the leading minister of the Dutch Church, the French Church, the German Lutheran and the Presbyterian Church, along with the representatives of the Church of England. And even more significant is it that in the first group constituting the University were men bearing Dutch, German, French, and Scotch names and representing these as well as the English elements of our population. No less significant was Columbia's early promise of service to the community. The preliminary announcement made by the first president was "that a serious, virtuous and industrious life being first provided for, it is the design of the college to instruct and perfect youth in the arts of surveying, navigation, husbandry, commerce, and government."

The University is the institution through which society recognizes its indebtedness to the past, through which it pays its obligations to the future, through which the leaders of a generation reveal the qualities of their leadership to their fellows. It enables men devoted to the serious pursuit of knowledge to render service to the government, the church, the family and the school. In assuaging human ills, in increasing the enjoyment of knowledge—which is culture—the University enables one to serve his fellow men, to satisfy their material needs, and to elevate their wants. There is no other institution which offers so many channels of service or has so many points of contact with life. There is none whereby men of such diversified abilities, interests and ideals can unite in a community life. There is no institution which makes greater demands for intelligence, for tolerance, for loyalty, for devotion, for idealism, for faith in human nature; there is none which gives a greater reward. There is no other institution or calling in life in which men can so construct their memorial; and this by giving no thought to the future, but merely by performing the allotted duties of each day.

While the effort of the investigator or teacher may not look beyond the immediate task, not so with the University itself. The larger movements in society—the progress of races, the development of nations—are usually unconscious. We are aware of them only as we look back and analyze. But with the University there is a definite, continuous and conscious effort to contribute to progress. In the largest sense it is a conscious striving. In this effort the University sets no fixed or absolute ideal, but follows a moving progressive standard of contribution to the welfare of the group by analysis of its ills, by definition of its needs, by satisfaction of its wants, in every variety of line. As the servant or agent of the University, as the University personified, the individual is stimulated to his best. He is able to secure a closer approximation of actual and possible accomplishment than is too often the case with the more general and remote ideals of religion and ethics or with the more vague social and political ideals. So, as in none of these fields, the life of the individual may enter into and become a part of the institution itself. Thus in time the University becomes a memorial to the labor of each of its members. Not but that here as elsewhere "a man's reach should exceed his grasp"; but the reach is a conscious one and the grasp is measured.

Institutions as a rule represent the right and good of the past, of old established experience. "New right usually begins by revolt." This is less true in the University than elsewhere because here the greatest freedom accords with the highest good of the general. New right or truth is the very goal of the university. Hence it happens that the University may be at once the bulkwark of conservatism and the outpost of freedom, for here the authority of past experience and the liberty of the individual most nearly accord. While teaching may tend to formalism, the search for truth and the testing of knowledge never do; and here the two are united.

This sense of freedom and of reality of service has a further consequence. In much of modern social life the sense of individual participation in a community process is lost. This is true in modern industry, or commerce, or business, or even in many of the professions. Most of the old consciousness of a mutual exchange of service has long since departed. There is no feeling of such participation in buying a loaf of bread or dining in a restaurant, or in riding in a Pullman car. But *this* sense of participation in fundamental social processes yet remains to add the touch of brotherhood and of idealism to University service.

Finally, the University is a memorial to men in the permanence of its contribution to life. It is suggestive that the period in history which reestablished man's desire for earthly immortality, for posthumous fame, should have immediately followed that which produced the University, man's most serviceable means for exerting an imperishable influence, for attaining lasting and worthy renown. The effort to discover new truth, to make known to the many that which has been revealed to the few—this has created an institution which calls for man's highest efforts, for his greatest devotion, and rewards him by granting that immortality of living "in minds made better by his presence."

One compelling impulse to belief in personal immortality lies in our inability to reconcile ourselves to believing that all the fairest products of life—the beauty of character, the grace and charm of personal achievement, the genius of seer or artist—are only temporary. It is difficult, if not imposible, to think that such results are washed away as footprints on the sand are obliterated by each succeeding wave. As has been said of the death of one who added much to the University influence of this generation, "Who can contemplate the fact of it and not call the world irrational if out of deference to a few particles of disordered matter it excluded so fair a spirit?"

Even with a belief that the immortality of the spirit gives permanency to the attainment of personal character, man's age-long regret has been for the transitoriness of his achievements. Consequently he has ever sought means to perpetuate his work, that the difficulties which have been overcome shall be stumbling-blocks no more, that the truth hidden for so long may not again disappear in the general ignorance, that the inspired insight of genius may become the light of day to the common man. The University grew out of such desires. It has become a most enduring monument to the efforts of man, an assurance that his highest ideals and achievements shall live and that no gain is to be measured merely by the span of a mortal life. So much of the personal gains of this life must be recognized as temporary only—wealth, social position, personal prestige, charm of personality—that we covet something more enduring, as does the soul when it contemplates death and the life of the spirit. So man has created such institutions as ours that accretions to the knowledge of the secrets of life may be made enduring and be rendered tangible in the organized form of science and art.

In contemplating the death of some who have been called from our midst during the past year, we experience the instinctive human feeling which impels to belief in personal immortality, the emotion which is aroused by the thought of the uncompleted life. When we see one cut off in the midst of a great work, when a reform is left unfinished, the formulation of some new aspect of truth left incomplete, when the personality of some inspiring teacher is removed from our midst, when the promise and beauty of youth is taken—there is an instinct which compels us to believe that somehow, somewhere, there must be a continuance and a completion of that so fairly begun. Such a feeling is all but universal. So far as this feeling relates to personality, it finds realization in the belief in immortality. So far as it looks to the task to be accomplished, it finds realization in efforts to create means that the good that men do may live after them. Of all institutions erected by man perhaps no other relates so directly to this end as does the University. Numerous generations of men and countless devotees of service to mankind have contributed to the body of truth which we retail day by day. Each worker may contribute his part. And if he be called from work incomplete, his effort remains; another builds upon it and so his labor is not in vain. Even personality itself is not lost as inspirer guides hearer, and hearer, in turn, becomes inspirer. Thus the University becomes an assurance that no life devoted to the service of mankind through the spread of truth shall remain incomplete, leaving a work unfinished, or a lifetime of labor of no avail.

One often thinks in contemplating the desolated hope, the insignificant deed, the isolated fact, even the single life, that law does not rule in the moral realm as it does in the physical universe. Effects appear to be out of all proportion to causes, causal forces to have no adequate results. In short, the incidents of human life seem not amenable to law. But into the lives of those who become in essence the living University there is introduced a greater orderliness of view, a wider vision, which shows to some extent at least the moral problems of life as subject to law. So man comes to relate his own problems, his own effort, his own glimpse of truth, his own contribution to knowledge, his own life, to a greater cosmic span, which permits him to get a glimpse of the wider arc, if not of the completed circle, of the lives and work of those who have gone before and of those who are to come after. His work appears as but a part of a much larger whole; he has taken up the work of other men and in time will resign it to others yet to come; in their work will his labors find fruition, his hopes find realization, his life find a fitting memorial.

Some have gone from among us this year who influenced the many and some who labored for more than man's allotted span of life. Some have gone who appealed only to the few and some whose years were all too brief for the work begun. Some there were who taught, some who cooperated through administrative skill and generous support, some who studied and aspired. The work of each will remain in the lives of those whose impressionable years came under their moulding influence. Through that influence, but to last far beyond the one generation, their lives have been built into the structure of this University, to stand as long as it stands and to represent whatever Columbia University means. For the University is interpreted to the men of each generation only through the men who make it. Of those who have finished their interpretation and who have this year laid down their work, each of us now recalls those endeared to him by intimate association, friends of whom we may say as was said of the grammarian of old—

Yea, this in him was the peculiar grace,
That before living he'd learn how to live—
    No end to learning:
Earn the means first—God surely will contrive
    Use for our earning.
Others mistrust and say, "But time escapes!
    Live now or never!"
He said, "What's time? Leave Now for dogs and apes!
    Man has Forever."

Paul Monroe

# THE RELATIONS OF FEDERAL, STATE AND LOCAL REVENUES*

## I.

IT is only in modern times that the fiscal inter-relations between central and local governments have become of importance. In ordinary states the question is one of divergence between national revenues and local revenues. In federal states the problem is further complicated by the interposition of the commonwealth or state between the federal or national government on the one hand and the local government on the other.

Government revenues are the counterpart of government expenditures, and these depend primarily upon the character and the extent of government functions. From this point of view, the fiscal relations in question are of considerable complexity. All expenditures were originally local in character. Economic life was at the outset based upon a local economy, and what little money was spent was both raised and expended primarily for local purposes. It was only when the national state developed as a result of the profound economic changes of the later middle ages that national expenditures now appeared on the scene, and especially for the purposes of the army and the navy. Somewhat later there came a two-fold development as a consequence on the one hand of trade and commerce and on the other of democracy.

Trade and commerce were responsible for the growth of expenditures connected with transportation, and especially with good roads. Although this was accomplished in part by the localities, more and more supervision was exercised by the central governments, so that the expenditures of the central government for such purposes now grew to considerable proportions. The same was true still later when, as in France, the construction of canals called for large outlays. The result of the movement down to the beginning of the nineteenth century was that the great burden of expenditure resting upon the individual was primarily for the purposes of the central government, and that even in England the local expenditures were limited in large measure to the care of the poor, with very slight additions for roads and other miscellaneous purposes.

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* A paper read before the Ninth Section of the Second Pan-American Congress in Washington, December, 1915.

At the beginning of the nineteenth century, the democratic movement, which was the result of the industrial revolution, altered the situation in two ways. In the first place, there now came a rapid increase of expenditures for education, for improving the health and sanitation of the community and, finally, for developing the general welfare in its still wider aspects. In the second place, these expenditures were overwhelmingly local in character, although there has also been a tendency of late for the central governments to assume to an increasing extent some of the same functions. The consequence has been that, on the whole, in the most recent period local expenditures have become in many ways quite as important as, even if not more important than, the central expenditures.

While there has been this general movement, the situation has been complicated by the fact that government functions and expenditures have been variously apportioned in different states. In some states certain functions have been gradually relegated to the local communities; in others, the contrary is the case.

In the Anglo-Saxon communities, there has been a growing tendency for a central control over the local functions of government; in others, as in France and Italy, there has been a tendency toward a greater decentralization. Moreover, in all federal states a further complication has been introduced in that in the separate commonwealths or states that stand between the localities and the federal government there has been a mixed movement both toward centralization and toward decentralization; so that in some communities the one tendency preponderates, in other communities the contrary. In the United States, for instance, the states have been gradually assuming the control of several functions that were originally left to the localities, as in the case of highroads, hospitals, asylums, state constabulary, and the like. On the other hand, the states have been losing some of their functions to the central government, as in the case of the growing federal control over railroads and various forms of business enterprises; and we now hear insistent demands for a federal quarantine, and for federal control of labor conditions. As a consequence, there is at present no clear-cut line between federal, state and local functions and expenditures.

Since the revenues of government stand in a certain relation to expenditures, the same difficulties that have arisen in the case of expenditures reappear in that of revenues. In fact, there are even more complications in revenue than in expenditure because of the possibility, as we shall see, of expenditures by one form of government being defrayed out of the revenues derived in part or in whole from another form of government. The whole subject of public revenues is therefore bound up with the problem of a proper relation between central and local finance, or in the case of federal governments between federal, state and local finance.

## II.

As a preliminary to a discussion of the fiscal relations of central and local governments, it is necessary to recall the two controlling principles of public revenues. These, as is well known, are, on the one hand, the principle of ability to pay and, on the other hand, that of benefit conferred. It need not be pointed out that the latter was the one long accepted by publicists, and it is only in recent times, with the emergence of modern democracy and with the insistence on the specifically social aspects of public finance, that the principle of ability to pay has come to the front. The most recent analysis of the subject, however, discloses the legitimacy of both principles, although it is careful to relegate each principle to its proper sphere. It is now well understood, for instance, that taxes in general must be framed and apportioned according to the principle of ability to pay; while most of the remaining categories of public revenues, such as fees, special assessments, and prices of all kinds for governmental services conform to the principle of benefits conferred or cost incurred.

While this demarcation is now generally accepted, it is none the less true that there is a certain border line or zone of indifference. Certain taxes like some imposts on land can be upheld almost as well on the principle of benefits as on that of ability to pay; while other payments, like inheritance taxes, which in some countries (like the United States) are legally included under the head of payments made for benefits or privileges, correspond in reality to the principle of ability. Without attempting to pursue further this inviting line of inquiry, it is sufficient for our purpose to point out that there is a jurisdictional division corresponding roughly to the above division in principle; that is to say, the chief home of revenues predicated on the principle of benefit is to be found today in the local divisions, while the chief home of revenues based on the principle of ability to pay is to be found in the more central governmental jurisdictions. The line is, indeed, not entirely sharp; for we find, on the one hand, some fees levied and not a few industries or enterprises conducted by central governments; while, on the other hand, certain local taxes are to be explained primarily on the principle of ability to pay. But as a general principle it is true that there exists in most countries today a larger field for the principle of benefits in the localities, and a larger field for that of ability to pay in the central jurisdiction.

## III.

If we turn to an analysis of the actual conditions to be found in the fiscal relations of central and local governments and if we confine our attention to what is the most important part of the subject, viz., the revenue from taxes and primarily from taxes which may be upheld on the principle of ability to pay, we shall see that there are no less than five different methods actually employed. These are as follows:

(A) The taxes are assessed by local authorities, with additions for the use of the central government. This is the common method in the American commonwealths, where the local revenues are derived, to an overwhelming extent, from the general property tax, levied upon real and personal property alike. The rate of the tax for purely local purposes is ordinarily arrived at by dividing the assessed valuation of the property in the locality by the amount to be raised for local purposes. To this local rate there are added rates for county as well as for state purposes, each of which is ascertained by dividing the assessed valuation of the property in the locality by the amount needed for the expenses of the county and of the state respectively. The same tax, assessed by the local officials—*viz.*, the general property tax,—is thus utilized for both local and central purposes.

(B) The tax is assessed by the central authorities with additions for local purposes. This is the reverse of the system last mentioned. It is to be found in France, whose example has been copied in not a few states. In France there are four taxes levied for state purposes: the land and buildings tax, the *patentes* or business tax, the *personelle et mobilière* or personal tax, and finally the door and window tax. The local revenues are obtained by adding a certain percentage, known as the *centimes additionels,* to each of these state taxes. There are, indeed, other revenues, chiefly from indirect taxes for state purposes, and from the *octrois* for local purposes; but the fact remains that so far as the bulk of local revenues is concerned, they are derived from this simple addition to the direct state taxes.

(C) The separation of the sources of revenue; that is, certain taxes are utilized for central, and others for local purposes. This separation again is either total or partial. A partial separation is very common. Virtually all nations, for instance, reserve customs duties, whether import or export duties, for the central government. Many nations again reserve definite classes of indirect taxes for the central government. In the United States, for instance, there are only one or two exceptions to the general rule that the indirect taxes are devoted to federal purposes, in the shape of the Internal Revenue. The same is true, although to a somewhat slighter extent, of the German Empire. Even in regard to direct taxes, however, the principle of separation of source is not infrequently found. In Great Britain, for instance, the income tax is utilized for the nation, while the local revenues are derived almost exclusively from the local rates or real estate taxes. Again, in Germany, the so-called taxes on yield (*Ertrags-Steuern*), which correspond to the four direct taxes still levied in France, are, since the reforms of 1893–1895, reserved exclusively for the local governments, although for the sake of better administration they are still assessed by the states. In the United States this tendency is also visible. In not a few commonwealths the inheritance tax and even the corporation taxes are now allocated to the state, while the local governments depend more and more upon the property tax. In New York this policy has been carried to such an extent that for a number of years during the first decade of the present century, it became unnecessary to levy any so-called direct or property tax as an addition to the local tax. In California this principle has been carried to the utmost limit, so that there is a complete separation of sources of revenue between the state and the localities.

(D) The division of the yield; that is, the revenues are collected by the central authorities, but a portion of the yield is assigned to the localities. This system, however, does not stand by itself alone; but it forms an incidental although important part of the revenue system in not a few countries. In the German Empire, for instance, the yield of the inheritance tax is divided between the empire and the states, and that of the land-increment taxes between the state and the localities. The same is true of the so-called death duties in Great Britain, where a portion of the yield is reserved for the local divisions. An analogous condition prevails in some of the American commonwealths where railroad or other corporation taxes are assessed and collected by the state governments, but are then returned in part to the local divisions. Conspicuous illustrations of a similar method are seen in New York in the liquor license or transfer tax and the mortgage tax, the proceeds of each being divided between the state and the locality.

(E) The system of subventions or payments from the central to the local governments or from the local to the central governments. A notable example of the former system is to be found in Canada, where, as a result of the surrender by the separate provinces of the right to levy customs and excise duties, the Dominion transfers annually large subventions to the provincial treasuries. A similar system is in force in Australia, since the constitutional amendment of 1910, as a result of which the Commonwealth, in return for the privilege of levying all customs and excise revenues, annually pays over to the separate states a fixed sum *per capita*. In all these cases the payments are made by the federal to the state government. In other countries, however, the reverse system obtains. During the period of the first Constitution of the United States the Federal government was almost entirely supported by the so-called requisitions upon the states, and today the German empire is still very largely alimented by the so-called *Matricular-Beiträge,* or contributions made by the states.

In comparing these five systems, it is clear that the first and the last possess obvious disadvantages. One of the chief difficulties connected with the first system is that the utilization for general state purposes of a locally assessed tax on property inevitably leads to an under-assessment of the property. It makes little difference, for instance, whether for purely local purposes we have an under-assessment of property with a high rate, or a full assessment with a low rate. Since a definite amount of revenue is needed for local purposes, and therefore a definite amount of money must be taken out of the pockets of each individual, as long as the property of all individuals is assessed in the same proportion, it makes no difference whether we have a low or a high rate. As soon, however, as the assessment is utilized for state purposes, and the amount to be raised is made to depend upon the assessed valuation in the county or the locality, it is clear that the lower the local valuation, the less will be the aggregate amount which the locality will have to pay to the state. This is one of the chief causes which have led to the under-assessment of property in the American states, and it is largely for this reason that the movement is now so pronounced in the United States toward both a central supervision over local assessments and an abandonment of the local property tax for state purposes. The first method thus is clearly susceptible of improvement.

The fifth system, again, namely that of subventions, is only a makeshift. To have the Federal government depend entirely upon largesses from the states is to render it more or less impotent, and certainly to make it subordinate to the states. That was the result of the American system of requisitions, and is one of the reasons for the growing fiscal complexities of the German empire. On the other hand, to make the separate states depend financially upon the federal government is to weight the balance in the opposite direction and is not, in the long run, desirable in the interest of a complete equilibrium. The system of subventions is concededly a makeshift system, and in Australia it has therefore been limited to a period of ten years.

The third system, namely that of the separation of source, possesses some advantages. The first is the conformity with the natural division of governmental functions and activities. Certain activities of government are local, some are inter-local or state, and some are national. If the revenues can be made to conform to this natural division, so much will be gained. The second advantage is the securing of greater equality in the assessment of property, and especially of real-estate, leading to the elimination of the unfortunate scramble for reduction of valuation in the localities. The third advantage, so far as concerns the relegation of the property tax to the localities, is a reduction to that extent of the direct taxation of property. The fourth is the removal of conflicts between the cities and the rural counties. The final advantage is the greater flexibility and adaptation of means to the end, whereby each locality may be better able to adjust its fiscal system to its own fiscal needs.

While these advantages are undoubted, we must be careful not to push the principle too far. As we have seen above, the line between local, state and federal functions of government is by no means always clear cut; and a complete separation of source might put into too bold a relief a division which does not exist in actual life. Moreover, a complete separation of source may sometimes introduce fiscal embarrassment. It may, for instance, happen that the particular source of revenue assigned to either the local, the state, or the federal government may be more than adequate for its purpose, while the source assigned to the other jurisdictions may be inadequate. There seems to be no convincing reason why the surplus of the one kind of revenue should not be utilized to make good the deficit of the other. Finally, it may occur that while a particular source of revenue is normally desirable for the local as against the state government, or for the state as against the federal government, it will none the less be found that there are certain aspects of that particular revenue which make a part of it, at least, preferable for the broader jurisdiction.

In short, while there is much to be said for the principle of separation of source, we conclude that it is in need of being supplemented by other principles in order to secure a well-rounded fiscal system.

We come, then, finally to the consideration of the second and the fourth systems, mentioned above as B. & D.

The system of a centrally assessed tax with additions for local purposes has much in its favor, especially when the tax chosen is one with a broad base. A good example of such a system is the Prussian income tax, which is administered by the state, and where additions up to a certain percentage are permitted for the use of the localities. The advantage is that the individual in paying his tax bill gives a lump sum for both state and local purposes, and is relieved from the annoyance of separate returns. The same is true of the *centimes additionels* in France. The obvious danger, however, in such a system is that by using the same tax for both state and local purposes we run the risk of increasing the rate to such an extent as to interfere with its maximum productivity,—a danger inherent in any system which looks toward the singleness rather than to the multiplicity of taxation. With this warning, however, and on the understanding that the system must not be pushed to an extreme, much may be said for the above method of local additions to centrally assessed taxes, as supplementary to the other methods in vogue.

Finally, we come to the principle of division of yield. This is the obvious result of any particular source of revenue where the stream of income gushes forth so abundantly as to produce more than is needed for the purpose in hand, and where, conversely, there is a deficiency elsewhere. An example of this is afforded by the railway taxes in some American commonwealths. It is conceded that from every point of view it is preferable to have the assessment of railways in the hands of central authorities; for the experience of the American states with the local assessment of what is essentially inter-local or extra-local in character has been unfortunate. To take, however, the entire revenue of railways for state purposes would be in not a few cases to rob the localities of a share of what they have been accustomed to rely upon; and it was, therefore, an easy transition to introduce the system of a state assessment and collection, with a repartition of at least a part of the yield among the localities. The same point of view is observable in the German inheritance tax, where for administrative and fiscal reasons it was found desirable to levy the tax as a federal impost, but where the separate states which had been accustomed to depend upon that source of revenue were able to prefer a claim to a portion of the yield.

In short, wherever it can be shown that a particular tax might well, on the basis of general economic considerations, aliment both the central and the local treasuries, there is strong reason for maintaining the principle of division of yield.

Our general conclusion from the above analysis is that, while the first and fifth methods are relatively indefensible, a combination of the second, third and fourth methods affords a reasonable ground for expectation of success.

## IV.

In deciding upon choice between, or a combination of, the above methods it is well to keep in mind certain fundamental principles. The three principles that should guide in the allocation of revenues as among various tax jurisdictions are: the extent of the base of the system, the efficiency of the administration, the adequacy of the revenue.

The extent of the base of taxation is obviously important. Some taxes rest, by their nature, upon the broadest possible base. The productivity of an inheritance tax for example depends upon the number and size of the assets of decedents. It is clear, however, that the smaller the area, the more variable will be the revenue. In a single town the death of one wealthy individual may swell the revenue from the inheritance tax in any one year to a point which may not be reached again for many years to come. This would be fatal to fiscal stability. A similar consideration would apply, although in a somewhat diminishing extent, as between state and nation in a federal government. The larger the area, the more regular the revenue.

Take, again, business or corporate activity, which originally was local in character but which has now become state and even national in character. Where the base is so broad, any attempt to narrow the jurisdiction is fraught with peril. In the Middle Ages, for instance, a local or municipal tax on personal property was entirely feasible, because of the essentially local character of property. In modern times, however, the assets of a large business and the intangible character of much of the property have now become national or international in scope, so much so in fact as to render fruitless any attempt to reach that property by local methods; and the same consideration has led to the abandonment in recent years of any effort to levy a purely local income tax.

Secondly, the efficiency of the administration. Certain taxes like real estate taxes are specially adapted to initial local administration, because the assessment takes place under the eyes of the individual taxpayer. In many other cases, however, the farther away we get from local administration the better the chances not only of securing expert officials, removed from the dependence upon local prejudice, but also of making allowance for certain inevitable gaps in any local administration. When the administration, for instance, of the liquor license or excise tax in New York was transferred from local officials to the state administration, the revenue was largely increased. Again, if we have a system of state assessment of corporations, the difficulty arises not only as to the allocation of the due proportion of total revenues earned by the corporation, but also of knowing what to do with purely interstate revenues. In the case of the inheritance tax, where a part of the revenue has been based upon the principle of residence of the decedent, we cannot ignore the chance of evasion by transferring the legal residence to a state where the tax does not exist, or where the rates are lower. Finally, the history of the United States particularly has shown that a federal administration is often more efficient than the state administration. Compare, for instance, the results displayed in the construction of the Panama Canal with those shown in the construction and maintenance of the new highways in New York. The efficiency of central as over and against local administration depends not only upon general political and administrative conditions, but also upon the constitutional and economic relations of certain revenues themselves.

Thirdly, the adequacy of the revenue in question must not be overlooked. In a certain jurisdiction which is already fairly well supplied with revenues, and where for reasons of greater equality or expediency a new source of revenue is added, it not infrequently happens that the total is more than is needed, while, on the contrary, as again not seldom occurs, where this new source had previously been enjoyed by another jurisdiction, the situation may be the reverse. Take, for instance, the case of a tax on corporations, which up to that time had largely alimented the local budget and which now is transferred to the state, thus resulting in a possible deficit in the one case and a surplus in the other. Take, again, the much mooted project of a federal inheritance tax in the United States, where even if the income were needed, the gap in the revenues would be strongly felt by the separate states. Such examples, which might easily be multiplied, indicate the need of a careful consideration of the principle of relative adequacy of the revenues.

The practical inferences from the above would, of course, differ in every nation. I shall limit myself, in closing, to a summary of the conclusions applicable at the present time to the United States.

The federal government should rely largely upon customs duties and indirect taxes, to be supplemented by a federal income tax and a federal inheritance tax. Up to the last quarter of the nineteenth century, the federal government depended, except in a few emergencies, upon customs duties. During the Civil War a system of internal revenue was added, because it made possible changes in the customs duties which without them would have been far more difficult to bring about. A single source of taxation is always less elastic than a multiple source.

While from a purely fiscal point of view the customs duties and the indirect taxes would entirely suffice for the support of the federal government, there has been, during the past few years, in the United States as elsewhere, an irresistible demand to supplement this system of indirect taxes by direct taxes which would respond more clearly to the principle of individual ability to pay. This movement has resulted in the imposition of a federal income tax, and will probably lead to the enactment of a federal inheritance tax. It is, on the whole, defensible not only from the point of view of equality of taxation, but also because both the income and the inheritance tax rest on so broad a base as to make their utilization by the federal government desirable. For a federal assessment will remove the difficulties of interstate taxation and minimize the dangers of jurisdictional evasion.

On the other hand, the scope of the federal direct taxes should not be exaggerated. While the modern tendency is everywhere in the direction of lessening indirect taxes, it must be remembered that the change is largely due to the fact that they have hitherto played an over-whelmingly preponderant rôle in taxation. It is a sound fiscal maxim not to rely exclusively or even to a preponderant extent upon either direct or indirect taxes, for each system has certain advantages of its own. In view of the fact that state and local taxes in the United States are to so very large an extent direct in character, it would seem to be the statesmanlike policy to retain a substantial measure of indirect taxes for the support of the federal government. The income tax and the inheritance tax which may be levied by the federal government ought, therefore, to be regarded as supplemental, rather than primary sources of income; especially as both the income and the inheritance taxes will be needed in the future to a still greater extent for purposes of state and local revenue. Our conclusion, therefore, is that the rate of the federal income tax ought to be relatively low; and that if a high inheritance tax should be imposed, only a portion of the yield ought to be retained for federal purposes.

The states, on the other hand, should rely chiefly upon corporation taxes, upon special taxes on property; and upon liquor and other license taxes. Where these do not suffice and an increasingly successful endeavor is made to abolish the inadequate general property tax, the states should rely, in addition, upon a part of the inheritance tax, to be assessed by the federal government, and finally upon income taxes, which should be supplementary, and as far as possible conformable, to the federal income tax.

The reason why a distinction is made in the suggested assessment of these two taxes is that the problem of residence is more easily solved in an income tax than it is in an inheritance tax; for the inheritance tax is really a tax upon the estate of a decedent, while the income tax may be so arranged as to include a business tax as well as a tax upon the individual. In either case, however, and irrespective of the jurisdiction which assesses the particular tax, some American states will no doubt, to an increasing extent, rely upon both the income and the inheritance tax.

Finally, local governments should rely primarily upon revenues referable to the principle of benefits, such as special assessments and fees of all kinds, which should be better regulated by state law; upon the tax on real estate and especially upon land taxes; and, so far as further revenues are needed, as a substitute for the unworkable personal property tax, upon additions to the state income tax.

It is not unlikely that the problem of fiscal interrelations will be solved in this general direction in the United States; for the solution is in harmony with the fundamental principles that have been presented above. In other countries, the practical aspect of the solution will no doubt be different; but it is safe to say that throughout the world the trend of adjustment in the fiscal relations of federal, state and local governments will be found to be in line with the solution that has been sketched above.

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# TENDENCIES IN STATE CONSTITUTIONS

THE convention to revise the New York Constitution which assembled on April 6, 1915, received and considered 725 proposals, absorbed the time and efforts of its 165 members for nearly six months and resulted in the submission of a revised constitution which was rejected by the voters in November by an overwhelming vote. Under the provisions of the constitution of 1894, which remains in force, the question "Shall there be a convention to revise the constitution and amend the same?" must be submitted again to the voters of New York at the general election in 1916; and if a majority of the votes cast therein be in favor of the convention, delegates will be elected at the general election in 1917 and convene on the second Tuesday in April, 1918.

The work of the convention whose revision has just been rejected by the voters, and the necessity of passing upon the question of the desirability of another convention, add practical and pressing importance to the ever interesting question of amendment and revision of state constitutions. Moreover, the question of calling a constitutional convention was submitted to the voters by the 1915 legislative sessions in New Hampshire, South Dakota, Tennessee and Louisiana. The Louisiana voters have already rejected the proposal. A proposal to call a convention has been seriously considered in Pennsylvania at the last two sessions and is now being urged before the Massachusetts legislature.

In considering the demand for constitutional revision and the number of proposed amendments submitted to constitutional conventions and to the annual sessions of our legislatures we must remember that not all of these represent any substantial need or substantial demand for changes in the fundamental law. Like the deluge of bills that overwhelms our legislative sessions, the proposal of constitutional changes often represents merely an outlet for accumulated emotion. Many such proposals are unimportant, ill considered and not adapted to accomplish any substantial betterment in our law or our government. Even among the amendments submitted by the legislatures or adopted by the people there is much that is of little importance. Obviously in the limits of a brief review it is possible to deal with only a few of the broader fields of law or government in which the amendments recently adopted or proposed disclose tendencies of importance.

While it is difficult to describe in general terms the contents of our constitutions—for they differ just as the resources, activities and population of the various states differ—it is, nevertheless, generally true that their principal concern is with the organization, powers and jurisdiction of the great divisions of government—the legislature, the judiciary and the executive—and it is convenient to consider the tendencies of amendment in similar order.

Our original constitutions were drawn on the theory that it was desirable to limit the powers of the legislature in the interest of the freest possible exercise of the rights of the individual. Practically all our constitutions contain something in the nature of a bill of rights which guarantees the individual against the action of the majority. The interpretation of these guarantees, and particularly that against the deprivation of liberty or property without due process of law, has resulted in avoiding much of the so-called social legislation which seeks to limit property and personal rights in the interest of the common good. Where such legislation has not actually been held unconstitutional, such serious questions respecting its validity have arisen that there has resulted a marked movement for constitutional changes which would give the legislature full power to restrict or control the individual in the interest of the whole state. Examples of such amendments are to be found in the authorization of legislation fixing the hours and wages of employees, regulating the conditions of employment in the interest of safety and sanitation, prohibiting employment of women and children under specified ages or in specified industries, providing systems of workmen's compensation based on liability without fault, authorizing excess condemnation by public agencies of property abutting on public improvements, regulating and controlling occupations and business, etc.

An amendment adopted in Ohio as the result of the 1912 revision provides that laws may be enacted regulating hours, establishing minimum wages, and providing for the comfort, health, safety and general welfare of employees, and adds that no other provision of the constitution shall impair or limit this power. A similar declaration has found its way into the constitutions of several other states. In effect, these declarations are little more than a constitutional declaration of the inherent power of the state government to legislate in the interest of the public welfare. Despite an occasional adverse decision, our courts are gradually coming to hold that under this inherent power—commonly designated as the state's police power—the legislature may, without any express authorization, legislate in the interest of the common good for the protection of the health, safety and welfare of employees. The sole effect of these constitutional declarations is to remove the necessity otherwise existing of proving to the satisfaction of the courts that the proposed improvement of the condition of employees has some relation to the betterment of the *public* health, safety and welfare. These amendments determine this question in advance by declaring in a form binding on the courts that any legislation beneficial to the health or welfare of employees is necessarily, and in fact, beneficial to the public health and welfare. An amendment seriously considered by the New York convention went a step further and in effect took from the courts the power to declare unconstitutional under the state constitution any act of the legislature which the legislature declared to be necessary for the protection of the lives, health or safety of employees.

While these amendments and others, like those authorizing workmen's compensation legislation, excess condemnation, and similar interference with individual, personal or property rights, may seem radical, the fact is that their effect is almost negligible except to the extent that the courts of a particular state take or may be expected to take a less liberal view of the restrictive effect of the due process clause than does the Supreme Court of the United States. Since the fourteenth amendment declares that no state shall deprive any person of life, liberty or property without due process of law, there remains about as much value in retaining this phrase in the state constitutions as there would be in repeating in the state constitutions the guarantee of the federal constitution that each state shall have a republican form of government. It is desirable that we have substantial uniformity in this kind of regulatory legislation, and this is impossible if due process is to have a different effect on the validity of similar legislation in different parts of the country.

We began, in this country, with a fear of unrestricted legislative power and we therefore limited its exercise by various general and specific constitutional restrictions. The specific restrictions are easily qualified or repealed. But in the case of general restrictions, like the guarantee of due process, qualification merely to the extent of validating a particular exercise of legislative power, like a workmen's compensation act, is extremely difficult. The movement of which these labor amendments are typical has begun and will probably continue either to fill our bills of rights with specific exceptions to their restrictions on legislative power or to eliminate their general guarantees in so far as they may duplicate similar guarantees contained in the fourteenth amendment.

The tendency of the amendments just described is to expand the legislative power by reducing the possibilities of judicial avoidance of legislative acts. This expansion of legislative power has not been accompanied by a corresponding increase of confidence in the legislative body. The expansion of power has been in the interest of legislation for the public good. It has been a protest against the power of the individual founded on the ancient guarantees of personal liberty and private property to invoke the aid of the judiciary in obstructing the effort of the public through its legislative body to provide by law for the common welfare. There has been no corresponding growth of confidence that the legislative body would exercise its new powers with wisdom and integrity. On the contrary, there has been a very marked tendency to enact amendments which seek on the one hand to control by the referendum and on the other to stimulate or supplement by the initiative the exercise of its powers by the representative body. Since 1900 fourteen states have adopted the initiative and referendum.

Practically all our constitutions contain important provisions respecting the organization and jurisdiction of the courts. These run all the way from election of judges to rules of evidence or geographical description of judicial districts. There is perhaps no single division of our constitutions in which there is more real opportunity for revision in the interest of the public welfare than in the judiciary articles, and it may be added none in which there is less intelligent public interest in the means of realizing that opportunity.

We have probably reached the limit of the tendency to provide for the election of judges for short terms. In the near future we shall turn to some method of selecting our judges and of securing against possible abuse of judicial power other than the popular control which an election for a short term was intended to give. It seems not unlikely that we shall soon be appointing our judges for indefinite terms with a procedure for removal for incapacity or unfitness by some process easier of execution than formal impeachment and less subject to the evils from which we are trying to escape than the popular recall.

The increase of litigation evidenced by the blocked condition of our court calendars, particularly in the centers of population, calls for some new means of disposing of many cases now tried by jury in courts equipped for the trial of more important matters. Much of the time of our trial courts is devoted to cases which ought to be settled by some system of conciliation or by courts equipped to handle minor matters promptly as well as justly. Provision for the reorganization of our judicial system is and will continue to be a source of much constitutional tinkering until the theoretical and practical problems involved receive more careful and comprehensive consideration than has yet been devoted to them.

Among the judicial amendments which have recently been adopted or seriously considered, are authorizations of verdicts in civil cases by a specified majority of the jury, authorizations of consideration by the court and jury of the failure by an accused person to take the stand and testify in his own behalf, and requirements that the legislatures return to the courts the power to make rules of practice. This power usurped by legislatures in the interest of definiteness and simplicity of procedure has been exercised in such manner that our rules of court have become a mass of specific detailed provision rendered more or less intelligible by numerous judicial interpretations. Rules of court demand more flexibility and more intelligent and responsible development than a legislative body is capable of giving them. Though it is possible that legislatures may voluntarily surrender control over this matter, the New York convention thought it desirable to provide by constitutional amendment that the power should be lodged permanently in the courts.

Provision for organization and procedure of the executive branch of the government in the administration of the business of the state has heretofore been fragmentary and without much regard to fundamental questions of public administration. Though most of our constitutions provide for the distinct separation of the legislative and executive branches of government, it was formerly not unusual, and is still the rule in a few states, for administrative officers to be elected by the state legislature. Where the governor is given power of appointment, it has been usual to subject his appointment of heads of administrative departments to the approval of the upper house of the state legislature. In practical operation this means that not the governor, but the governor and the upper house, has the appointing power. In many other instances administrative officers who ought to be subordinate to the governor are elected by popular vote. For example, the commissioner of the state labor department is elected in some states. All these provisions which take the control of administration of the state business out of the governor's hands and divide it either among several elected officials or between the governor and the upper house violate a cardinal principle of efficient administration, namely, the centralization of power over and responsibility for the administration. This and the difficulty of securing serious discriminating consideration by the voters when there are a number of independent officers to be elected, have given rise to the movement for a short ballot, i. e., reducing to a minimum the number of elective state officers and centralizing the appointing power in the governor, making him at the same time responsible for the success or failure of his administration.

Whatever else a constitution ought to contain, it must provide for the general organization and procedure of the state government. Mere mention of the administrative branch of government or haphazard provision for the election of some administrative officials and the appointment of others is insufficient in these days of increasing administrative duties and expanding administrative organization. Our states have in recent years undertaken new and important activities in behalf of the welfare of their citizens. Public health departments making and enforcing rules and regulations in the interest of maintaining the public health, labor and industrial departments making and enforcing rules intended to secure the health, safety and welfare of employees, public utility commissions making and enforcing rules intended to secure impartial service and reasonable rates to the traveling and shipping public, banking and insurance departments enforcing laws intended to secure the interest of depositors and policyholders, workmen's compensation commissions administering state insurance funds and deciding disputes involving the right to or the amount of compensation for injuries in the course of employment, and various departments, boards and commissions in charge of the construction, maintenance or operation of public works or institutions, have not only given new importance to the administrative branch of the state government, but have tremendously increased its cost.

This increased activity and increased cost of government give rise to irritation on the part of the citizen, not only because of increased taxes, but also because of the annoyance of administrative inspection, administrative demands for information, and administrative action to impose penalties for violation of regulatory statutes. Therefore it is not surprising that reformers who have heretofore confined their attention to securing new legislation should now be devoting themselves to securing more efficient administration of what we have. Efficiency and economy in administration cannot be had while control over and, incidentally, responsibility for, the administrative machine is scattered about among legislators and state departments and officials; and so far as constitutional provisions are responsible for such scattering there is bound to be an increasing demand for their revision.

It may be that it is not desirable to insert, as did the New York revision in the constitution itself, the details of the reorganization, but it will at least be necessary to take out of our present constitutions everything which is inconsistent with that centralization of authority and of responsibility which is essential to an efficient reorganization. Past experience would tend to prove that it will also be necessary to restrict the power of the legislature to create new state departments or agencies unless they be placed under the control of the governor.

Closely related to improvement in administration is the proposal for an executive budget. Though many of the purposes of the budget proposal can be accomplished without constitutional change—and curiously enough have been in large measure accomplished without even legislation in California, where constitutional amendments have become commonplaces—nevertheless, essential elements of a satisfactory budget system, like summoning the governor to appear before the legislature, requiring the legislature to permit the governor and his aids to appear, and restricting the legislative action on the governor's budget to reduction or elimination of items, probably require constitutional amendment. Moreover, without such amendment this important improvement in government would depend on maintaining an informed public demand for voluntary executive and legislative cooperation to give it effect.

The regulatory legislation which we have just been discussing involves much technical detail, not only in the formulation of specific rules or standards of conduct, of safety, of reasonableness, etc., but equally in devising tests for determining compliance or non-compliance with these standards, as, for example, the standard of sufficiency of ventilation in a factory and the scientific test for determing the existence or non-existence in a particular factory of the standard prescribed. These standards and tests are too detailed and too technical for formulation by our legislatures and moreover are too frequently changed by scientific discoveries or changing conditions to be made as rigid as legislation once enacted is likely to become. Therefore practical administration has developed a necessity that legislation be confined to general rules and that large discretionary power be delegated to the administrative officials to fill in the details by formulating rules and regulations having the nature and in practice the force of law. Because of the constitutional separation of the legislative from the executive power the courts have held that delegation of legislative power to executive officers is unconstitutional. While recent decisions have tended to soften this rule and to sustain important delegations of the power to make detailed rules and regulations, nevertheless the demand for greater administrative power over the details of legislation requires broader and more certain recognition of the validity of effective delegations. The recent New York revision authorized a conservation commission to make rules which should have the force of law unless modified by the legislature. This is an adaptation of the English practice in respect to statutory rules and orders promulgated by administrative officials.

The demand for greater rule-making power in administrative officials, though reasonable in view of the difficulties of enforcing much of our regulatory legislation, is nevertheless fraught with grave evils; and if it is to be recognized by additional constitutional authorization, ways and means must be devised for safeguarding the proper exercise of the power granted. The comparative failure of past attempts to safeguard the exercise by the legislature of its powers suggests that the real solution of the problem of safeguarding the exercise of increased administrative power is to be found in constitutional provisions directed to the securing of more intelligent, efficient and responsible administrators. These observations apply with equal force to the increasing delegation to administrative officers and commissions of judicial power to decide controversies arising in the enforcement of legislation.

The increased importance of administration and the tendency to increase the powers of administrative officers give added importance to the movement to secure popular control of public officers through the recall. Nine states now have the recall in operation, but three of these except judicial officers. The Ohio convention of 1912 did not adopt the recall, but instead required the legislature to provide for removal of public officers for "misconduct involving moral turpitude" and other causes provided by law, by methods other than impeachment. One of the carefully prepared proposals submitted to the New York convention provided for the dissolution of the legislature by the governor on issues arising between them and for a special election which would involve not only the return of the legislators but also the continuance of the governor in office.

In this brief review there is space merely to mention those specific but important amendments which relate to the amount or redemption of state or municipal debts, the rates and subject of state and local taxes, and the relation generally of the state to the local government. In the absence of constitutional provision, municipalities are the creatures of the legislature. It has been usual, and not without cause, to assign many of the defects and much of the waste in our municipal government to political and other tinkering at the state capitol. So long as the legislature has absolute power over municipalities it will be either tempted or prodded to use such power. Constitutional provisions depriving the legislature of the opportunity to interfere in local matters have taken the form either

(*a*) of prohibiting local and special laws, or
(*b*) of authorizing municipalities to frame their own charters.

The latter has become the usual method of freeing the municipality from state interference and of granting to it what is known as home rule. Some of the home rule provisions are general authorizations which leave much to be determined by the courts as to the contents of local charters and the limits of the state power to interfere. Some of them are very detailed specifications of what may be inserted in such charters. California, for example, has very lengthy constitutional provisions with respect to home rule for cities and counties. Whenever it becomes necessary to change the detail contained in these provisions it will be necessary for the City of San Francisco, for example, to seek authority to make the change, not as formerly from the legislators at Sacramento, but from the voters of the state. This is a curious consequence of the effort to secure local home rule,—freedom from the legislature at the expense of control by the people of the state. San Francisco must convince the people of the entire state, instead of their representatives, that the change in her charter which conflicts with the existing constitution is desirable.

Recent constitutional revision shows a general tendency to increase the length of our constitutions by inserting details heretofore left to legislative enactment. However much we may generalize about the desirability of confining constitutions to statements of fundamental principles and of excluding legislative details, the task of determining precisely what shall go into the constitution and what shall be left for the statutes is a difficult one, not only because the line which separates the fundamental from the detail is hard to draw and harder to apply, but also because conflicting interests seeking to secure permanency for their ideas either stretch the field of the fundamental or insist on exceptions in behalf of their particular purpose. The principal difference between our constitutions and our statutes is that a constitution is or ought to be more difficult of amendment, and that instead of giving way to a later inconsistent statute the constitution is paramount to such statute and renders it invalid. Detail constitutional provisions tend to break down these distinctions between constitutions and statutes.

Proponents of reforms in government or law, desirous of securing as far as possible without subsequent legislation the permanent adoption of their ideas, naturally try to make a constitutional amendment as nearly self-executing as possible. If the constitution provides a difficult method of amendment, their purpose is accomplished to the extent that it will be difficult for other reformers to upset what they have accomplished; but they may themselves be embarrassed by the difficulty of securing detail amendments needed to make the adjustments required by changing conditions. If on the other hand the constitution provides a relatively easy method of amendment, a constitutional provision is little more permanent than a statute and the needed adjustments can be made as readily by amendment as by new legislation.

This tendency to insert details in constitutions is closely related to the movement to decrease the difficulties of amending our constitutions. On the other hand it may be said that the increase of detail in the constitution makes ease of amendment essential. It seems certain, however, that where amendment of the constitution is made at least substantially more difficult than the enactment of legislation, the proponents of constitutional changes will avoid inserting detail. Many of the western states have so reduced the difficulties of amending their constitutions as to remove practically all distinction between their constitutions and their statutes, except only that a provision in the constitution is less apt to be declared invalid by the courts.

In California, and a few other western states, a constitutional amendment may be submitted for the approval of the people by the vote of a single legislature or by direct action of the voters under the initiative. Legislation likewise may be enacted by the legislature or initiated by voters. If enacted by the legislature, it may be referred for the approval of the voters. Is it any wonder that the proponents of a reform in government or law are tempted to submit as much as possible of their proposal in a constitutional amendment, thereby escaping the necessity of securing by practically the same process as that used to secure the amendment legislation to give it effect?

The fact that legislative details inserted in the constitution thereby escape the danger of being held unconstitutional under the state constitution only encourages the insertion of such detail in the constitution. It is unlikely, however, that so much legislative detail would be inserted if the process of amendment were not difficult. This tendency to facilitate the enactment of amendments to the constitution must either be checked by a return to amendment provisions which will reestablish one of the essential differences between a constitution and a statute, viz. the greater permanency of the former, or it may be expected to develop constitutions which are nothing more than codes of law which the state courts cannot hold invalid unless they are contrary to the Federal constitution or laws.

THOMAS I. PARKINSON

# THE STATUS OF THE UNIVERSITY PROFESSOR IN THE UNITED STATES*

THERE are in the United States about 150 universities. Forty of these are supported and controlled by the states in which they are situated, twenty by the Roman Catholic Church, fifty by Protestant churches, and forty are independent of both church and state. How many of these institutions deserve the name of university it is difficult to say. The Association of American Universities, which determines its own membership, includes twenty-two institutions,—eleven that are controlled by states, one by the Roman Catholic church and one by a Protestant church, and nine institutions that are independent. This group of institutions includes, without doubt, the strongest universities in the country, and the status of their professors may be considered representative.

In organization, these institutions are all autonomous, their final control resting in each case in a board of regents or trustees, the members of which, usually, are appointed by the governor of the state in the case of state institutions, or are self-elected for long terms in the case of those that are independent. These regents or trustees are always representative and often distinguished citizens, and are frequently graduates of the institutions which they direct. They are responsible for income and expenditure, for appointing and fixing the salaries of the teaching staff, and for the formal approval of the plans of the faculty concerning academic matters.

Perhaps the most distinctive feature of the universities of the United States is the importance of the office of the president. Appointed by the trustees for an indefinite term, he gives all of his time to the institution as its official head, connecting the trustees with the faculty, of which he is chairman, and representing both before the public. The incongruity in a democracy of concentrating so much power in a single individual has been pointed out repeatedly, but it is generally agreed that this arrangement has been one of the chief sources of the extraordinary development of universities in the United States, and the dangers that are implied in it are generally considered to be mainly theoretical. All of the presidents of the representative institutions that have been mentioned were chosen because they combined administrative ability with distinction as scholars and teachers. They are, without exception, men of scholarly training, who have won national and often international reputation for their contributions as professors to their chosen fields of knowledge, which include the humanities, the exact sciences, the political and social sciences, philosophy, psychology and education, and law and medicine. Under the leadership of such professor-presidents the status of the university professor is one of stability, freedom and distinction. The only members of the faculties who lack freedom are the presidents themselves, since in the multiplicity of their duties they are seldom able to continue their productivity as scholars. Their application of the professorial habit to wider fields in public addresses, however, has made the influence of academic oratory in the United States second only to that of the statesmen.

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* Read at the second Pan-American Scientific Congress in December, 1915, this review was addressed primarily to the assembled scholars of Latin America. For this reason, though it rehearses some matters familiar in the United States, it has unusual significance from its implied contrasts, its view of proportions, and its comprehensiveness.—*Editor.*

The organization of these representative universities comprises, farther, a considerable number of administrative officers,—deans of faculties, directors of schools, secretaries, registrars and the like. These officers also usually have been, and frequently continue to be, university teachers, chosen for their administrative ability, and appointed by the trustees upon the recommendation of the president after the usually informal recommendation of the faculty. The faculties jealously guard their right of determining what courses of instruction shall be given and of fixing the requirements for the admission and graduation of students. As, however, the professor usually considers administrative work on his own part an unwelcome interruption of his teaching and research, such matters are left, ordinarily, to the administrative officers, subject to a faculty and committee control, which is usually merely formal. Whenever necessary, as in large questions of policy, the faculty direction becomes active and responsible. The administration of equipment, income and expenditure, also, is important,—half of the institutions that have been mentioned have each an equipment valued at more than ten million dollars, including libraries of half a million books each, and two thirds of them have an income of more than a million dollars a year. Except, however, to express his own needs and desires, the professor attends but little to these financial and material affairs, leaving them to librarians, treasurers, bursars, superintendents of buildings and similar officers.

The professor himself is usually a person whom circumstance or an early interest in learning has devoted wholly to the intellectual life. His or her preparation,—for about ten per cent. of university professors are women—has included a dozen years of elementary and secondary schooling, four years in an academic college leading to the degree of bachelor of arts, and three or four years of graduate or professional training terminating in a professional degree or the degree of doctor of philosophy. European study does not now form a part of this preparation so often as it did in earlier years, but it is an almost invariable supplement. An acquaintance with Latin-America is still an unusual distinction. After such preparation, college or university teaching is begun at the age of twenty-five or twenty-six, and advancement depends upon skill in teaching and accomplishment in research. The representative instructor is thirty years of age, the junior professor thirty-five, the professor between forty and forty-five.

The appointment and promotion of the professor is determined by his colleagues, sometimes formally, but usually by informal concensus of opinion and recommendation to the president, upon whose formal recommendation the appointment is made by the trustees. Instructors are usually appointed from year to year; junior professors for periods of three, or five, or ten years; full professors are appointed at first for one such term, and then indefinitely. The tenure of the professor is jealously guarded by the profession. Each case of dismissal or failure to receive reappointment is thoroughly canvassed, sometimes in periodicals and newspapers, with the result that a committee of the American Sociological Society recently reported its inability to discover more than a dozen genuine instances of unjust dismissal in twenty years.

The salary of the professor is not large. The representative instructor in the institutions that have been mentioned receives $1,200 a year; the representative junior professor receives from $2,000 to $3,000; the representative full professor, from $3,000 to $5,000. Perhaps 150 professors in the country are in receipt of $5,000 a year; perhaps half that number receive $6,000 or $7,000 or $7,500. A recent statistical study has shown that special distinction is regularly recognized by advancement in salary. The professor who becomes president may double his income, although usually he increases it by about half. There are, however, additional considerations. Outside of teaching from six to twelve hours a week, preparing for this teaching, consulting with students, and whatever committee work he chooses to undertake, the professor's time is his own. On one or two days each week he has no assignments; he, like his students, has recesses of half a week, or a week, or ten days, in the autumn, at Christmas and in the spring. He has at least three months of vacation each summer. Once in every seven years he has a sabbatical year's leave on half pay. Much of this free time he devotes to his scholarly work. Some of it he may give to teaching for extra pay in the university's afternoon, evening, Saturday, summer or correspondence courses. The professor is in demand also for lectures and addresses and published articles, for all of which he receives remuneration. Not infrequently his books sell well, sometimes widely; and his scientific investigations frequently have a commercial value, which accrues to him. If he is a teacher in a professional school, it is considered appropriate for him to give a part of his time to professional consultation and advice. In these ways the salary of the representative professor may be increased by half; sometimes it is more than doubled. His expenditures, moreover, are considerably reduced by the university's provision of offices and clerical assistance, of laboratories and supplies, of clubs and sometimes of residences, of free instruction for members of his family, and, often, of discounts on his purchases, so that his money goes a fourth or a half again as far as that of the independent scholar. In a hundred institutions, also, the professor looks forward to a pension of rather more than half pay at sixty-five, or earlier in case of disability, with a proportional provision for his widow for life. In fine, the financial status of the university professor in the better institutions in the United States is so arranged that he need not suffer serious financial anxiety, even though living in a country where the standard of living is high and where personal expenditure is lavish.

The work of the professor naturally varies in accordance with the faculty to which he is attached. The institutions that have been mentioned are composed of from two to twenty faculties. All of them have academic colleges and graduate schools, and all but three have faculties of medicine, law and engineering. In a third of them medicine is accompanied by pharmacy and dentistry, and in the same number engineering is accompanied by architecture. Half of the universities have faculties of education and a third have schools of commerce. Only one fourth have faculties of agriculture, this field being usually cultivated in separate institutions; and but two have schools of forestry, this being usually associated with agriculture. Only five universities have faculties of theology, such instruction being usually given in separate seminaries. Five institutions also have faculties of the fine arts and of music and two have schools of journalism and of library practice, all of these subjects being comparatively new in university recognition.

The academic college, or faculty of arts, or of liberal arts, or of arts and letters, or of arts, letters and science, as it is variously called, aims to provide both a broad general culture and a foundation for professional training. Requiring for entrance eight years of elementary and four of secondary schooling, the academic college ordinarily expects the student to devote two years to such fundamental subjects as ancient and modern foreign languages, English, history, mathematics, and the natural sciences. The two years that follow may be devoted to a choice of subject which is limited only by the resources of the institution. There are, of course, many variations of this plan, like the free elective system, which allows the student to study whatever he likes; or the major subject plan, which relates all of his work to some dominant interest; or the group system of selecting subjects in several related fields. There is, however, a general opinion that there are certain subjects with which every student should have some acquaintance, that every student, further, should do advanced as well as elementary work in one or more fields, and that there should be a reasonable margin for absolutely free choice. All of these subjects the professor teaches as he likes, sometimes in a traditional way, sometimes with a careful consideration of method. In the ancient languages, which are still generally retained as the epitome of historic culture, there is a good deal of mere preparation and recitation of lessons. The same is true of modern languages, although what is called the "direct method" is increasingly used. The languages most generally taught are French and German; the third was usually Italian until recently, when Spanish has far surpassed it in popularity. Portuguese is seldom studied. Most students learn to read one or more foreign languages, but the student, or even the professor, who learns to speak them is comparatively rare. In English the effort is to develop, through practice and correction, a habit of writing respectably, and there is a strong new tendency to require that every written exercise in every department shall meet the standards of the department of English. Concerning literature, the success of the effort to develop intelligent appreciation, largely by lectures, is considered doubtful. The lecture method is increasingly questioned also in history, where it is now frequently accompanied by the use of the seminar method, particularly in dealing with recent or contemporary events. In the sciences the laboratory method is invariable, resulting in what is probably the best teaching that is done in the colleges. The academic college endeavors, moreover, to care not only for the student's intellectual development, but also for his general welfare. Dormitories, gymnasia, dining halls, clubs and sundry other provisions for the health and happiness of the undergraduate are general, and the ideal professor in the university college is the gifted teacher who also has a deep and wide personal interest in all of the moral and social problems of the young people who are entrusted to his care.

The graduate college, or school of arts and sciences, sometimes called the faculty of philosophy, sometimes with coordinated faculties of pure science or of political science, requires for entrance the previous completion of the work of the academic college and provides advanced study of one or two years leading to the degree of

Master of Arts, and yet more advanced study leading, after a total of three or more years, to the degree of Doctor of Philosophy. Nine tenths of the degrees of doctor of philosophy that have been granted in the last score of years in the United States have been conferred by the twenty-two institutions that have been mentioned. Three institutions grant more than fifty such degrees each year; a dozen confer twenty or more,—the number granted annually having trebled in the last ten years. Two thirds of these advanced students are in the sciences, especially chemistry, physics, biology, psychology, mathematics and geology. The humanities, however, are well represented, especially English, the ancient and the modern languages, philosophy, history, economics, sociology and political science. The graduate faculty is the favorite among professors; the number of students is limited and select, the work is of an advanced character and closely related to the professor's most important interests, the method of procedure is so flexible in its adjustment to the subject and so intimate in its relation to the student that he may become the famulus of the professor and his devoted disciple. This faculty also has the advantage that its work is constantly subject to the test and reward of presentation to learned societies and of publication in a host of learned periodicals. Its professors thus may and do devote themselves wholly to productive scholarship.

The most important of the professional faculties in the universities of the United States is that of medicine, an extraordinary development having taken place in this field in the last twenty years. In 1906 there were 160 medical schools in the country. The steady improvement in standards has now reduced this number to 95, two thirds of them connected with universities, and one third supported by state appropriations. Numerous medical schools now have equipment running into millions of dollars in value and incomes of hundreds of thousands. This development has been due largely to the strong professional spirit among physicians, made effective through organizations like the American Medical Association and its Council on Medical Education. This body, the decisions of which are generally accepted by the state boards which alone have the power to license practitioners, now approves 66 medical schools as fully meeting its requirements concerning equipment, staff, requirements for admission and curricula. The Council requires the previous completion of at least one year, and recommends two years, in an academic college for admission to the four-year curriculum in medicine, which is followed by a year as a hospital interne. The schools in general more than meet the Council's minimum requirement that at least six professors in each school shall devote their entire time to instruction and research,—preferably the professors of anatomy, physiology, pathology, bacteriology, physiological chemistry and pharmacology. This requirement has greatly improved the quality of medical teaching, and has greatly encouraged scientific production. Didactic teaching has almost vanished, all instruction being given in the laboratory and the hospital; and there is now a growing movement for clinical professors who shall give all of their time to teaching and investigation. The parallel development in dental education has been taken advantage of by many Latin-American students.

The development of legal science in the United States has been retarded by the detailed and complicated character of the common law. There are now 164 law schools in the country, most of them merely preparing students to pass the state examinations which admit them to practice. Here also, however, there has been a steady development, so that all reputable schools now require for admission the previous completion of eight years of elementary and four years of secondary schooling, and most schools require in addition two or three years of work in an academic college. In one third of the law schools the curriculum is two years in length and in two thirds it is three years. Legal scholarship has also been aided by what is called the "case method" of instruction, an inductive or laboratory method of American invention, according to which the student himself works his way through concrete representatives cases to the principles involved, and so to a fundamental and comprehensive understanding of legal philosophy. The professor who employs this method, which has become almost universal in the university schools, must necessarily give his entire time to the guidance of his students, so that the number of legal scholars has become large and their scholarly production important. In general, instruction is confined strictly to the law, the wider relations of the subject being considered in separate faculties of political science.

In engineering, similarly, the bulk of university instruction is conducted by men who give their entire time to teaching and research, although, as in law, their work is supplemented by special lectures from distinguished practitioners who give a portion of their time to teaching. The student ordinarily enters upon work in engineering after the preparation required for entrance to the academic college, and studies throughout four years, with supplementary practical work in the summers. The newness of the country, its size, and its physical characteristics, have furnished extraordinary opportunities to civil, mining, metallurgical, chemical, mechanical, electrical, hydraulic, railway, structural, and marine engineering. It is matter of general knowledge how these opportunities and those of the related field of architecture have been and are being met. The professor of engineering is fully in touch with the opportunities and the problems of the profession and is meeting them with an inventive and professional spirit that is just now being expressed in a comprehensive survey and appraisal of contemporary engineering education, with new plans for the future.

The Faculty of Education, or Teachers College, as it is frequently called, is a recent and still rapidly developing addition to university organization. In its fullest form,—and some such university schools count their students by thousands—it provides curricula leading to the bachelor's, master's and doctor's degrees and to sundry professional diplomas and certificates. The professor who prepares students to teach particular subjects must be in touch not only with the developments in these subjects themselves, but also with the rapidly extending knowledge and constantly changing doctrine concerning the historic, philosophic, psychological, and sociological foundations of education, and, in addition, with the ever increasing experiment and experience in the practice and administration of schools. All of these special educational subjects, moreover, have professorships of their own, filled by men who combine indispensable scholarship with extensive practical experience, which is kept constantly fresh by the large and increasing number of teachers and school administrators in active service who come to the universities for part time or summer work. Practically all professors of education give their full time to teaching and investigation. As men who are thus able to combine theory and practice are in great demand, they easily command half again as much or even twice as much salary as their colleagues in the more traditional fields; and their much desired public addresses and popular books increase their incomes still more largely. Their scholarly contribution is already conspicuous, particularly concerning the relations of school and society, the psychology of the pupil, scientific tests of school progress, and the statistics of educational administration.

Time fails to discuss the status of the professor either in the comparatively new faculties of commerce and finance, with their close relation to the industrial, mercantile and financial life of the nation; or in the schools of agriculture, where research is supported by great sums from the Federal government, and where single discoveries have repeatedly been the source of enormous developments in the agricultural industries; or in the schools of theology, with which the country is well supplied and which are now seeking a working adjustment, although not an identification, with the universities; or in the dozen independent schools of philanthropy, which have a similar university relation.

All of these autonomous institutions and cooperating faculties are drawn and held together by a host of learned organizations. Academies are comparatively uncommon and separate research institutions are yet rare, although increasing. But the state, the urban, the agricultural, and the collegiate institutions all have active organizations. Each region and many states have their own associations of universities and colleges. Great bodies like the American Association for the Advancement of Science correlate varied fields of knowledge by meetings and periodicals. Each separate subject, from archaeology to zoology, has its distinct organization, and there are many associations devoted to the problems of teaching and of the teacher, among the latest being the promising American Association of University Professors. The life of the individual professor has thus a background of pleasant and profitable acquaintance with the individuality and work of his colleagues throughout the country.

The representative university professor in the United States, then, is a man of thorough training, wholly devoted to teaching and investigation, for which he is provided with large freedom and a moderate but secure income. He characteristically enjoys his intimate relation with his students and his colleagues, and his concentration in research, and he receives the most generous public recognition. The poorest men in the country vote large sums for the state support of higher education, the richest vie with one another in providing funds for the privately controlled institutions.

The public esteem in which the professorship is held may perhaps be most readily summarized from the relation that it has sustained to the Presidency of the United States. George Washington planned a university, and Thomas Jefferson devoted his last years actually to creating one. The second president, John Adams, was a teacher, and his son, John Quincy Adams, sixth president, was a professor in Harvard University. Madison, the fourth president, and Garfield, the twentieth, were professors in and presidents of colleges. The present incumbent of the White House came from a university professorship and presidency, and his predecessor now occupies a professor's chair. Socially there is no better status in the land than that of the university professor.

CLYDE FURST

## SCIENTIFIC AND ECONOMIC PROGRESS*

A REVIEW of the rise and growth of that body of practices which is termed engineering, and particularly of that which relates to the manufacturing industries, may lend itself to an understanding of the factors which have contributed to the development of our industrial institutions and of the kind of service demanded of those who engage in this field of practice. These characteristics of engineering service, if accurately portrayed and interpreted, will clearly point the way to the activities which our engineering schools must encompass that they may effectively contribute to scientific progress and invention. To comprehend adequately the influences which have circumstanced the economic development of a people we must not only review the pages of political history to glean therefrom a knowledge of the growth of social customs and their expression in political forms of government, but we must also search still further for those unheralded and non-spectacular events in history which have changed the life habits of the people and established modes and ideals of living the attempted realizations of which continually demand the readjustment of social and political institutions. Such an investigation carefully pursued will easily demonstrate that the service of the engineer and moreover his training for service have been a most deciding factor in the creation of those higher standards of living consequent to the scientific discoveries and inventions in the constructive and service-rendering industries.

It is perhaps a little more than a century since the most crude and cumbersome mechanisms were embodied in simple machines for spinning yarn and weaving cloth and in further substitution of machine for hand labor to the creation of the limited necessities of daily living. Somewhat previous to this time, steam power had been introduced in pumping operations in mines, and these crude prime movers were successfully employed in this limited field of service. It soon became apparent, as further inventions were made, that the engines exclusively used for pumping could be arranged to drive these crude machines and thus permit a more elaborate combination of machinery for making and machinery for driving and a more extensive production of household goods. Gradually there was developed a series of inventions and designs which step by step supplanted the slow processes of hand labor, suggested possibilities of more elaborate developments, and paved the way for that remarkable application of machinery to the service of man which characterizes the age in which we live to-day. These simple yet operative machines, breaking down the barriers which had retarded the progress of the world for thousands of years, were created by that necessity which awaits no law. As parts of machines broke in service, larger ones were made, and as certain combinations failed to function, others were devised. Progress was slow both in the development of operative machines and in the methods of their production, and many years passed by in the trial and error period of this development before certain men of genius, observing the many failures of parts, began to study them and gradually developed those foundational principles of machine construction now embodied in the sciences of the strength of materials and of machine design. Others, observing the performance of steam in engines and familiar with the then known laws of physics, began that series of analyses which is now known as the science of thermo-dynamics. Still others, studying and classifying the motions in machines, formulated therefrom the science of kinematics. Thus there was gradually introduced a body of laws and principles relating to the design, construction and operation of machinery which enabled later builders not only to construct more understandingly, but to extend the field and attempt constructions previously thought impossible. Fostered by the institutions of learning of that day, formulated and developed in their application to an ever-widening field of possibilities, these laws and principles were taught and disseminated to the youths who were to build for us that foundation of civilization upon which we stand to-day. Thus through the patient labors of the analyst and the ingenuity of his disciples and the perseverance of a faithful body of men who were inspired by the spirit of these creations, there is hardly a phase of human endeavor in which the services of the engineer are not reflected.

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* Address delivered before the second Pan-American Scientific Congress, Washington, December, 1915.

Look about your own home: your house is built of bricks made by machines; the woodwork, plaster, nails, wall-paper, pipes and fittings, rugs, carpets, curtains, linen, clothes, hats and shoes, soap and towels, gas and electric fixtures, cooking utensils,—these and many others are the direct result of the operation of machinery. The food on your table is baked, toasted, cooked, and put into containers by machinery, kept in cold storage by machinery, and transported by machinery, so that the fruits, cereals, and meats of Florida, California, Europe, South America, and Asia are at your doors at a price within the reach of all. The machinery which makes possible all these things, completely changing the conditions of living in the past two generations, is the product of that group of men who serve the people as engineers.

But engineering is more than the designing, building, and operating of machinery. At the time when it was learned that machinery might be employed in substitution for hand labor, and that power could be used to operate this machinery, it was found desirable to collect such machines about the source of power. The grouping of machinery, and its housing in buildings, brought together many who, being concerned day in and day out with this one thing, gave rise to a new group in the social world, namely, the industrial workers. A new element, therefore, had to be considered, and those who had constructed the machines were now called upon to direct the labors of men engaged in their operation. The machine-constructor, with his knowledge of forces and their applications to production, proved to be best qualified to control the men who must use these machines. The isolated workman, who supplied his own capital, purchased the raw material, laid out the work, made the product, and sold the goods, gave way to the larger industrial unit with its subdivision of functions. To-day, therefore, the making of every article of commerce represents the combined endeavors of capitalists and investors in industrial securities, operators and laborers of all classes, managers, distributors and carriers, the interests of which are the interests of the people, the importance of which is so great that nation will war with nation to protect the operation of its manufacturing institutions. So tremendous has been the growth of the industries founded on machinery that to-day in the United States the manufacturing industries employ over six million men and women who, through their earnings, directly support twenty-five million persons, or nearly one-fourth of our entire population. If to these we add those employed in transportation, which is also founded on machinery, we can account for as many more and find nearly one-half of our poulation directly supported by the earners of wages in the manufacturing and transportation industries.

Not only has the use of machinery in production brought together large masses of people whose labor must be directed by the engineer, but it has also caused great aggregations of capital, making possible the possession of machinery, equipment, and materials to work upon. Because of his knowledge of the characteristics of materials and machinery, and his ability to judge their income-bearing value, the engineer has been entrusted with their selection as well as their use, and, therefore, has become intimately identified with the financial phase of the industries. The capital invested in the manufacturing industries in the United States amounts to the colossal sum of fifteen thousand million (15,000,000,000.00) dollars, and the annual value of their products is over twenty thousand million ($20,000,000,000.00) dollars. Thus engineering has become that profession which is concerned with materials, machinery, money, and men; its practice includes the design, construction, performance, and use of machinery in the creation of services such as light, heat, power, transportation, communication, and refrigeration, in the construction and operation of our public works, and in the manufacture of the articles of commerce too numerous to mention, and also the management of labor and the supervision of the economic conditions affecting the output and marketing of the products of the factory. While engineering is highly technical, it is essentially an economic study. Just as the banker operates through the medium of bonds and stocks and is successful as he understands the laws which condition their value, so the engineer operates through materials, machinery, and men, and is successful as he understands the laws which condition the existence and prosperity of manufacturing institutions.

To define clearly the province of engineering education in this development of our material resources and institutions is by no means an easy task, yet it cannot be denied that its influence both directly and indirectly has been a most essential factor. A review of present developments in our engineering schools seems to indicate that perhaps the most direct effect of engineering education in the past has been its contribution to purely scientific facts and principles, to the exclusion from consideration of those conditions under which these may be commercially useful. However this may be, it appears that the economic necessities of the industries have forced themselves to the attention of engineering instructors, so that we find our engineering schools at the present time earnestly endeavoring to modify both the content and the spirit of the subject matter handled and more closely parallel the economic requirements of engineering practice. The tendency in our engineering schools to-day, therefore, while emphasizing the necessity of excellence in the treatment of scientific facts and methods of analysis, is increasingly toward that commercial and economic treatment which is so essential to an adequate knowledge of the use of science in engineering service. We find accordingly that those subjects in engineering instruction which were formerly thought to have their sole foundation in the sciences of physics, chemistry and mathematics and which conveniently admitted of formulated treatment, are modified in their presentation to the inclusion of questions of cost and the influences of economic environment. Though it was once believed that because engineering practice required a knowledge of scientific facts and principles, instruction in these alone was a sufficient preparation for the practice of the profession, our more progressive schools have realized that this is not sufficient and that a knowledge of the economic adaptability of facts and principles is of equal if not of greater importance to an adequate understanding of engineering practice.

Accordingly while formerly a student was taught to manipulate with the mathematics of thermodynamics in explanation of the behavior of steam in an engine and instructed in the principles of performance of water wheels through the sciences of hydraulics and mechanics, and to compute the stresses in a framed structure through the principles of graphical statics, he is now taught in addition to these that the cost at which power may be generated is determinable by clearly defined principles and laws by means of which he may decide whether a steam-power plant or oil-engine installation or water-power development, each with a given type of housing structure, is capable of producing power in this locailty or that locality with minimum cost of investment, depreciation charges and cost of labor and materials in operation, to satisfy a real demand and justify its creation. He learns not only how a machine pattern is made by some method selected for demonstration by the instructor, but also that it may be made in a variety of ways, each of which is justifiable according to the quantity of production, demand for rearrangement of parts, adaptability to economic methods of moulding and to other conditions affecting the cost of producing castings by it. He not only learns to determine the proportions of machine parts to suit the loads imposed upon them, but also that the proportions must be modified to permit the part to be duplicated in a series of sizes of a given class of machine, or to facilitate founding and machining operations, that the completed machine may be supplied to the market at a price and in competition with other manufacturers of the same class of goods.

These attempts of our engineering schools in the past to make the instruction in engineering subjects more nearly representative of standard practice have met with more or less success depending on the closeness of contact of the instructors with engineering practice and their ability to incorporate the spirit of engineering in methods of instruction. The effect of a proper amalgamation of the purely scientific and technological aspects of engineering with the economic and commercial principles upon which successful practice is founded is to create in the student that sense of proportion and judgment which tends to economize his efforts in contributing to scientific progress and inventions. Not only will he know how to proceed to judge the scientific feasibility of a project, but also to determine what commercial limitations make a scientifically possible project impracticable; and moreover, if he has that rare spirit of inquiry developed by proper methods of instruction, he may be able to determine that commercial limitations in a given field of practice exist because of an insufficient or entire lack of knowledge of scientific facts and principles, and thus be led to an investigation of scientific foundations the successful issue of which may be a most important contribution to the revolution of engineering practice in a given field. Perhaps the most striking instance of this later kind of scientific investigation is that conducted by the late Dr. Fred. W. Taylor. His studies in the ancient art of cutting metals and the discoveries resulting therefrom have not only caused the redesign of nearly all of our metal-cutting machines to the improvement of their functional characteristics, but has completely revolutionized the methods of machine-shop management, the influence of which is felt in many quarters not at all concerned with engineering processes.

Just as our schools have had to adjust themselves in the past to satisfy the demands made upon them by the progress of engineering developments, the wonderful advances and possibilities of our present day in the inventions of machinery and processes resulting in the creation of research departments in such industries as could afford them and the establishment in a few instances of private research institutions, have forced the attention of our engineering schools in this direction. The question of the establishment of research in our schools of engineering and moreover the spirit which shall dominate this development is of great importance, not only to the schools themselves, but also to the industries both large and small to the advantage of which these laboratories are proposed. Those industries, both at home and abroad, in which research laboratories have been installed have demonstrated beyond question their value to scientific progress. These conditions also demonstrate the necessity for establishing research laboratories accessible to all engineering industries, including those which cannot afford the investment and maintenance charges of private equipment. It seems quite proper, therefore, that engineering research laboratories should be installed in those universities which are most likely to maintain an intimate contact with industrial institutions and through cooperation with which the spirit and content of research work will harmonize with the real condition to be met. The usefulness of such laboratories, to which any manufacturer may bring his problems for analytical and experimental investigation, is quite apparent and needs no demonstration. The cooperation of the manufacturer in the use of his complete plant or a part thereof for certain investigations which are beyond the scope of laboratory equipment and the successful issue of which can be accomplished only with full plant equipment is most essential in the pursuit of this new kind of research work. With this sort of cooperation between the industries and the universities, not only will it be possible to advance the art in many lines of production, but there will be provided skilled engineers and investigators through the graduate students and fellows assisting in these investigations, who will thus be available for the very best type of technical service. It is impossible to foretell what advantage can result from this source. The following pages classify the latest reports of the U. S. census on our principle industries.

Can it be doubted for one moment that these industries will be benefited, and through them the people at large, by a most intimate association with trained scientists and investigators, or that the engineering schools on the other hand, upon which the industries depend for the men who shall advance the sciences and arts they encompass, will be better able to prepare the workers in scientific fields? "The philosopher," said Samuel Johnson, "may be delighted with the extent of his views, the artificer with the work of his hands, but let the one remember that without mechanical performance refined speculation is an empty dream and the other that without theoretical reasoning dexterity is little more than brute instinct."

The time has passed, if indeed it ever has been, when the industries and the engineering schools can come to their full possibilities without close cooperation. The separation of the two institutions whose technical interests at least are one has been a loss to both in spite of the rapid development of each. The men coming from our schools have not been as well prepared for immediate usefulness as they might have been, and the industries on the other hand have failed to profit by the results of scientific discoveries which have never become known beyond academic circles. In fact, one of the greatest services to be rendered by our engineering schools lies not so much in the discovery of new facts and principles as in the

## SUMMARY OF STATISTICS OF INDUSTRIES IN THE UNITED STATES

Arranged by Dr. Charles E. Lucke

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| Industry | Number of Establishments | Wage Earners (Average Number) | Value of Products | Value Added by Manufacture |
|---|---|---|---|---|
| All industries | 268,491 | 6,615.046 | $20,672,051,870 | $8,529,260,992 |
| *Industries with Products Valued at $500,000,000 or over* | | | | |
| Slaughtering and meat packing | 1,641 | 89,728 | 1,370,568,101 | 167,740,317 |
| Foundry and machine shop products | 13,253 | 531,011 | 1,228,475,148 | 688,464,009 |
| Lumber and timber products | 40,671 | 695,019 | 1,156,128,747 | 648,011,168 |
| Iron and steel, steel works and rolling mills | 446 | 240,076 | 985,722,534 | 328,221,678 |
| Flourmill and grist-mill products | 11,691 | 39,453 | 883,584,405 | 116,007,926 |
| Printing and publishing | 31,445 | 258,434 | 737,876,087 | 536,101,497 |
| Cotton goods, including cotton small wares | 1,324 | 378,880 | 628,391,813 | 257,382,343 |
| Clothing, men's including shirts | 6,354 | 239,696 | 568,076,635 | 270,561,189 |
| Boots and shoes, including cut stock and findings | 1,918 | 198,297 | 512,797,642 | 180,059,429 |
| *Industries with Products Valued at $100,000,000 but less than $500,000,000* | | | | |
| Woolen, worsted and felt goods and wool hats | 985 | 166,810 | 435,978,558 | 153,100,519 |
| Tobacco manufactures | 15,822 | 166,810 | 416,695,104 | 239,509,483 |
| Cars and general shop construction and repairs | 1,145 | 282,174 | 405,600,727 | 206,187,315 |
| Bread and other bakery products | 23,926 | 100,216 | 396,864,844 | 158,831,181 |
| Iron and steel, blast furnaces | 208 | 38,429 | 391,492,283 | 70,791,394 |
| Clothing, women's | 4,558 | 153,743 | 384,751,649 | 175,963,423 |
| Smelting and refining copper | 38 | 15,628 | 378,805,974 | 35,274,336 |
| Liquors, malt | 1,414 | 54,579 | 374,730,096 | 278,134,460 |
| Leather, tanned, curried and finished | 919 | 62,202 | 327,874,187 | 79,595,254 |
| Butter, cheese and condensed milk | 8,479 | 18,431 | 274,557,718 | 39,011,654 |
| Paper and wood pulp | 777 | 75,978 | 267,656,964 | 102,214,623 |
| Automobiles, including bodies and parts | 743 | 75,721 | 249,202,075 | 117,556,339 |
| Sugar, refining, not including beet sugar | 19 | 9,399 | 248,628,659 | 22,340,699 |
| Furniture and refrigerators | 3,155 | 128,452 | 239,886,506 | 131,111,664 |
| Petroleum, refining | 147 | 13,929 | 236,997,659 | 37,724,257 |

| Industry | Number of Establishments | Wage Earners (Average Number) | Value of Products | Value Added by Manufacture |
|---|---|---|---|---|
| Electrical machinery, apparatus and supplies | 1,009 | 87,256 | 221,309,563 | 112,742,159 |
| Liquors, distilled | 613 | 6,430 | 204,699,412 | 168,722,519 |
| Hosiery and knit goods | 1,374 | 129,275 | 200,143,527 | 89,902,474 |
| Copper, tin and sheet iron products | 4,228 | 73,615 | 199,824,218 | 87,214,945 |
| Silk and silk goods, including throwsters | 852 | 99,037 | 196,911,667 | 89,144,751 |
| Smelting and refining, lead | 28 | 7,424 | 167,308,650 | 15,442,528 |
| Gas, illuminating and heating | 1,296 | 37,215 | 166,814,371 | 114,386,527 |
| Carriages and wagons and materials | 5,392 | 69,928 | 159,892,537 | 77,941,259 |
| Canning and preserving | 3,767 | 59,968 | 157,101,201 | 55,278,142 |
| Brass and bronze products | 1,021 | 30,618 | 149,989,058 | 50,760,646 |
| Oil, cottonseed, and cake | 817 | 17,071 | 147,867,894 | 28,034,419 |
| Agricultural implements | 640 | 50,551 | 146,329,268 | 86,022,749 |
| Patent medicines and compounds and druggists' preparations | 3,642 | 22,895 | 141,941,602 | 91,565,937 |
| Confectionery | 1,944 | 44,638 | 134,795,913 | 53,645,140 |
| Rubber goods, not elsewhere specified | 227 | 26,521 | 128,435,747 | 46,243,926 |
| Food preparations | 1,213 | 14,968 | 125,331,181 | 41,389,032 |
| Paint and varnish | 791 | 14,240 | 124,889,422 | 45,873,867 |
| Cars, steam railroad, not including operations of railroad companies | 110 | 43,086 | 123,792,627 | 44,976,766 |
| Chemicals | 349 | 23,714 | 117,688,887 | 53,567,351 |
| Marble and stone work | 4,964 | 65,603 | 113,092,967 | 75,695,883 |
| Soap | 420 | 12,999 | 111,357,777 | 39,178,359 |
| Coffees and spice, roasting and grinding | 607 | 7,490 | 110,532,787 | 27,327,689 |
| Leather goods | 2,375 | 34,907 | 104,719,008 | 44,692,240 |
| Fertilizers | 550 | 18,310 | 103,960,213 | 34,438,213 |
| *Industries with Products Valued at $25,000,000 but less than $100,000,000* | | | | |
| Coke | 315 | 29,273 | 95,696,622 | 31,672,095 |
| Brick and tile | 4,251 | 76,528 | 92,776,504 | 69,040,402 |
| Glass | 363 | 68,911 | 92,095,203 | 59,975,704 |
| Musical instruments, pianos and organ and materials | 507 | 38,020 | 89,789,544 | 46,024,807 |
| Furnishing goods, men's | 900 | 38,482 | 87,710,197 | 38,585,354 |

| Industry | Number of Establishments | Wage Earners (Average Number) | Value of Products | Value Added by Manufacture |
|---|---|---|---|---|
| Millinery and lace goods | 1,537 | 39,201 | 85,893,632 | 40,853,357 |
| Wire | 56 | 18,084 | 84,486,518 | 23,943,587 |
| Dyeing and finishing textiles | 426 | 44,046 | 83,556,432 | 48,295,131 |
| Jewelry | 1,537 | 30,347 | 80,349,874 | 43,349,874 |
| Stoves and furnaces, including gas and oil stoves | 576 | 37,130 | 78,853,323 | 49,515,062 |
| Pottery, terra-cotta and fire clay products | 822 | 56,168 | 76,118,861 | 54,207,956 |
| Shipbuilding, including boat building | 1,353 | 40,506 | 73,360,315 | 42,145,957 |
| Carpets and rugs, other than rag | 139 | 33,307 | 71,188,152 | 31,625,148 |
| Cement | 135 | 26,775 | 63,205,455 | 33,861,664 |
| Cordage and twine and jute and linen goods | 164 | 25,820 | 61,019,986 | 20,105,176 |
| Cooperage and wooden goods, not elsewhere specified | 1,963 | 26,269 | 60,248,260 | 23,320,419 |
| Fur goods | 1,241 | 11,927 | 55,937,549 | 24,160,644 |
| Paper goods, not elsewhere specified | 403 | 19,211 | 55,170,564 | 23,921,645 |
| Bags, other than paper | 109 | 7,968 | 54,881,622 | 8,517,154 |
| Boxes, fancy and paper | 949 | 39,514 | 54,450,015 | 28,733,774 |
| Cutlery and tools, not elsewhere specified | 959 | 32,996 | 53,265,757 | 34,986,556 |
| Boots and shoes, rubber | 22 | 17,612 | 49,720,567 | 20,143,391 |
| Glucose and starch | 118 | 4,773 | 48,799,311 | 11,900,540 |
| Beet sugar | 58 | 7,204 | 48,122,383 | 20,857,213 |
| Tin plate and terneplate | 31 | 5,352 | 47,969,645 | 6,080,211 |
| Hats, fur-felt | 273 | 25,064 | 47,864,630 | 25,755,399 |
| Gas and electric fixtures and lamps and reflectors | 619 | 18,861 | 45,057,372 | 24,590,015 |
| Mineral and soda waters | 4,916 | 13,147 | 43,508,464 | 27,042,938 |
| Ice, manufactured | 2,004 | 16,114 | 42,953,055 | 31,636,557 |
| Silverware and plated ware | 183 | 16,610 | 23,228,547 | 23,896,440 |
| Wirework, including wire rope and cable | 611 | 12,348 | 41,937,952 | 17,544,038 |
| Explosives | 86 | 6,274 | 40,139,661 | 17,328,113 |
| Malt | 114 | 1,760 | 38,252,233 | 7,787,934 |
| Oil, linseed | 29 | 1,452 | 36,738,694 | 5,704,118 |
| Mattresses and spring beds | 930 | 11,322 | 35,783,154 | 15,300,646 |
| Clocks and watches, including cases and materials | 120 | 23,857 | 35,196,842 | 24,066,144 |
| Smelting and refining, zinc | 29 | 6,655 | 34,205,894 | 8,975,893 |
| Firearms and ammunition | 66 | 14,715 | 34,111,564 | 17,090,901 |

| Industry | Number of Establishments | Wage Earners (Average Number) | Value of Products | Value Added by Manufacture |
|---|---|---|---|---|
| Corsets | 138 | 17,564 | 33,257,187 | 17,616,772 |
| Cars and general shop construction and repair by street r. r. cos. | 541 | 22,418 | 31,962,561 | 16,794,662 |
| Locomotives, not made by r. r. cos. | 16 | 14,909 | 31,582,302 | 16,522,319 |
| Iron and steel pipe, wrought | 28 | 6,817 | 30,886,270 | 7,944,361 |
| Oil, not elsewhere specified | 189 | 1,715 | 30,865,122 | 9,458,161 |
| Sugar and molasses | 214 | 4,127 | 30,620,738 | 9,325,894 |
| Sewing machines, cases and attachments | 47 | 19,296 | 28,262,416 | 16,807,771 |
| Smelting and refining, not from the ore | 89 | 2,147 | 28,072,041 | 4,909,622 |
| Turpentine and rosin | 1,585 | 39,511 | 25,295,017 | 20,384,179 |
| *Industries with Products Valued at $10,000,000 but less than $25,000,000* | | | | |
| Belting and hose, woven and rubber | 46 | 6,319 | 24,729,221 | 10,223,814 |
| Coffins, burial cases and undertakers' goods | 284 | 9,339 | 24,525,905 | 12,561,638 |
| Iron and steel, bolts, nuts, washers and rivets | 108 | 11,345 | 24,484,907 | 11,680,572 |
| Artificial feathers, flowers and plumes | 412 | 10,016 | 23,980,567 | 10,353,163 |
| Cash registers and calculating machines | 50 | 7,465 | 23,708,326 | 20,155,860 |
| Belting and hose, leather | 139 | 3,006 | 23,691,887 | 8,069,284 |
| Gloves and mittens, leather | 377 | 11,354 | 23,630,598 | 10,422,597 |
| Gold and silver, reducing and refining, not from the ore | 62 | 456 | 23,611,764 | 1,628,055 |
| Grease and tallow | 353 | 4,357 | 23,419,395 | 7,875,956 |
| Oilcloth and linoleum | 31 | 5,201 | 23,339,022 | 7,788,921 |
| Buttons | 441 | 16,427 | 22,708,065 | 13,166,774 |
| Fancy articles, not elsewhere specified | 494 | 12,191 | 22,632,199 | 12,271,485 |
| Photographic apparatus and materials | 103 | 5,195 | 22,561,341 | 15,853,709 |
| Chocolate and cocoa products | 27 | 2,826 | 22,390,222 | 6,867,162 |
| Rice, cleaning and polishing | 71 | 1,239 | 22,371,457 | 2,870,377 |
| Wood, turned and carved | 1,050 | 14,139 | 22,198,572 | 12,454,876 |
| Hats, straw | 98 | 8,814 | 21,424,255 | 9,956,055 |
| Baking powders and yeast | 144 | 2,155 | 20,774,588 | 11,436,603 |
| Iron and steel forgings | 172 | 8,168 | 20,293,440 | 10,053,589 |
| Babbit metal and solder | 109 | 897 | 19,767,935 | 3,498,235 |
| Typewriters and supplies | 89 | 9,578 | 19,718,767 | 15,641,421 |

| Industry | Number of Establishments | Wage Earners (Average Number) | Value of Products | Value Added by Manufacture |
|---|---|---|---|---|
| Roofing materials | 117 | 2,465 | 19,204,423 | 6,746,246 |
| Artificial stone | 3,439 | 9,957 | 18,595,688 | 11,552,746 |
| Window shades and fixtures | 219 | 3,930 | 18,595,688 | 5,918,325 |
| House-furnishing goods, not elsewhere specified | 260 | 4,907 | 18,508,886 | 6,138,078 |
| Lime | 853 | 13,897 | 17,951,— | 11,221,081 |
| Stationery goods, not elsewhere specified | 153 | 6,206 | 16,647,223 | 8,903,587 |
| Glass, cutting, staining and ornamenting | 583 | 9,206 | 16,647,223 | 8,903,587 |
| Dyestuffs and extracts | 107 | 2,397 | 15,954,574 | 6,270,923 |
| Umbrellas and canes | 256 | 5,472 | 15,864,— | 5,808,207 |
| Bags, paper | 74 | 3,212 | 15,697,959 | 5,343,367 |
| Dairymen's, poulterers', and apiarists' supplies | 233 | 4,871 | 15,463,492 | 9,374,591 |
| Brushes | 384 | 6,954 | 14,694,003 | 7,507,066 |
| Blacking and cleansing and polishing preparations | 501 | 2,417 | 14,679,120 | 7,716,728 |
| Awnings, tents and sails | 621 | 4,242 | 14,499,020 | 6,122,239 |
| Wall paper | 45 | 4,037 | 14,449,247 | 6,825,896 |
| Brooms | 898 | 5,199 | 14,431,593 | 6,040,260 |
| Wood preserving | 53 | 2,403 | 14,098,978 | 4,770,525 |
| Glue | 65 | 3,265 | 13,717,820 | 6,193,291 |
| Hats and caps, other than felt, straw and wool | 494 | 6,201 | 13,689,338 | 6,998,886 |
| Signs and advertising novelties | 288 | 5,540 | 13,546,385 | 8,837,470 |
| Looking-glasses and picture frames | 427 | 6,021 | 13,475,082 | 7,950,076 |
| Liquors, vinous | 290 | 1,911 | 13,120,846 | 6,495,313 |
| Upholstering materials | 230 | 4,067 | 13,053,561 | 4,984,867 |
| Wall plaster | 198 | 4,791 | 12,803,758 | 6,796,581 |
| Surgical appliances and artificial limbs | 324 | 4,241 | 12,399,314 | 7,027,658 |
| Steam packing | 153 | 3,648 | 12,159,989 | 5,509,696 |
| Optical goods | 217 | 6,398 | 11,734,811 | 7,547,354 |
| Phonographs and graphophones | 18 | 5,199 | 11,725,996 | 8,626,605 |
| Photo-engraving | 313 | 5,343 | 11,624,000 | 9,-49,020 |
| Saws | 96 | 4,832 | 11,535,631 | 6,623,865 |
| Waste | 53 | 1,897 | 11,398,011 | 2,561,422 |
| Matches | 26 | 3,631 | 11,353,138 | 6,754,260 |
| Salt | 124 | 4,936 | 11,327,834 | 6,124,480 |

| Industry | Number of Establishments | Wage Earners (Average Number) | Value of Products | Value Added by Manufacture |
|---|---|---|---|---|
| Hairwork | 250 | 3,534 | 11,216,175 | 5,135,565 |
| Sporting and athletic goods | 180 | 5,321 | 11,052,286 | 5,487,520 |
| Dentists' materials | 87 | 1,573 | 10,835,553 | 2,734,236 |
| Bicycles, motorcycles and parts | 95 | 4,437 | 10,698,567 | 5,616,998 |
| Instruments, professional and scientific | 263 | 4,817 | 10,503,601 | 7,585,617 |
| Lard, refined, not made in slaughtering and meat-packing establishments | 7 | 399 | 10,326,471 | 695,240 |
| *Industries with Products Valued at $5,000,000 but less than $10,000,000* | | | | |
| Sulphuric, nitric and mixed acids | 42 | 2,252 | 9,884,057 | 4,498,229 |
| Wood distillation not including turpentine and rosin | 120 | 2,721 | 9,736,998 | 3,861,147 |
| Peanuts, grading, roasting, cleaning and shelling | 46 | 1,949 | 9,736,551 | 1,124,487 |
| Cordials and syrups | 117 | 1,095 | 9,662,176 | 4,320,908 |
| Mirrors | 148 | 2,994 | 9,570,797 | 3,666,091 |
| Lapidary work | 77 | 627 | 9,172,832 | 2,612,383 |
| Lead, bar, pipe and sheet | 33 | 802 | 9,144,930 | 1,733,397 |
| Springs, steel, car and carriage | 54 | 3,196 | 9,005,362 | 4,278,092 |
| Models and patterns, not including paper patterns | 709 | 4,171 | 8,868,166 | 5,991,936 |
| Ink, printing | 71 | 1,121 | 8,865,504 | 4,690,587 |
| Flavoring extracts | 420 | 1,299 | 8,828,034 | 4,369,806 |
| Carriages and sleds, children's | 84 | 5,300 | 8,805,129 | 4,676,255 |
| Scales and balances | 87 | 3,559 | 8,785,642 | 6,081,645 |
| Boxes, cigar | 274 | 6,115 | 8,491,082 | 4,178,038 |
| Safes and vaults | 42 | 3,343 | 8,490,541 | 5,048,011 |
| Vinegar and cider | 963 | 1,542 | 8,447,577 | 3,483,532 |
| Toys and games | 226 | 5,305 | 8,264,135 | 4,709,897 |
| Hat and cap material | 74 | 2,367 | 8,236,319 | 2,856,349 |
| Butter, reworking | 24 | 295 | 8,200,533 | 776,875 |
| Iron and steel, nails and spikes, cut and wrought, including wire nails not made in steel works or rolling mills | 57 | 2,765 | 8,191,620 | 4,219,208 |
| Oleomargarine | 12 | 605 | 8,147,629 | 1,650,997 |
| Flags, banners, regalia, society badges and emblems | 211 | 3,572 | 8,113,989 | 4,304,240 |

| Industry | Number of Establishments | Wage Earners (Average Number) | Value of Products | Value Added by Manufacture |
|---|---|---|---|---|
| Cars, street railroad, not including operations of r. r. companies | 14 | 3,583 | 7,809,866 | 3,549,396 |
| Shoddy | 88 | 2,041 | 7,446,364 | 2,445,658 |
| Pencils, lead | 11 | 4,134 | 7,378,744 | 3,783,111 |
| Galvanizing | 46 | 1,447 | 7,338,330 | 1,619,631 |
| Show cases | 149 | 3,399 | 7,167,100 | 4,027,239 |
| Emery and other abrasive wheels | 51 | 1,943 | 6,710,666 | 5,059,351 |
| Needles, pins, hooks and eyes | 49 | 4,638 | 6,694,095 | 4,365,441 |
| Windmills | 34 | 2,337 | 6,676,599 | 3,345,236 |
| Soda-water apparatus | 63 | 1,797 | 6,555,597 | 4,113,059 |
| Stereotyping and electrotyping | 174 | 2,850 | 6,338,694 | 4,618,592 |
| Paving materials | 49 | 1,419 | 6,229,400 | 2,751,794 |
| Screws, wood | 11 | 3,464 | 6,198,955 | 3,890,429 |
| Drug grinding | 25 | 922 | 6,006,999 | 2,553,279 |
| Cork, cutting | 62 | 3,142 | 5,939,938 | 2,505,317 |
| Billiard tables and materials | 54 | 1,495 | 5,877,837 | 2,509,159 |
| Washing machines and clothes wringers | 100 | 1,833 | 5,824,889 | 2,987,528 |
| Baskets, and rattan and willow ware | 456 | 4,664 | 5,695,356 | 3,359,948 |
| Files | 57 | 4,158 | 5,691,203 | 4,095,473 |
| Pumps, not including steam pumps | 102 | 2,136 | 5,582,962 | 3,096,360 |
| Pipes, tobacco | 62 | 2,775 | 5,311,900 | 2,853,345 |
| Wool pulling | 37 | 631 | 5,180,856 | 1,077,606 |
| *Industries with Products less than $5,000,000 in Value* | | | | |
| Mucilage and paste | 127 | 538 | 4,918,341 | 1,634,900 |
| Pens, fountain, stylographic and gold | 65 | 1,225 | 4,738,693 | 2,492,239 |
| Type founding and printing materials | 122 | 2,026 | 4,703,506 | 2,931,275 |
| Kaolin and ground earths | 119 | 1,990 | 4,680,548 | 2,638,737 |
| Labels and tags | 96 | 2,313 | 4,669,965 | 2,759,626 |
| Electroplating | 461 | 2,717 | 4,509,559 | 3,304,374 |
| Sand and emery paper and cloth | 10 | 611 | 4,357,792 | 1,975,334 |
| Moving pictures | 16 | 506 | 4,206,448 | 2,014,323 |
| Lasts | 60 | 1,728 | 4,158,933 | 2,834,478 |
| Clothing, horse | 33 | 1,648 | 4,134,864 | 1,361,476 |

| Industry | Number of Establishments | Wage Earners (Average Number) | Value of Products | Value Added by Manufacture |
|---|---|---|---|---|
| Whips | 57 | 1,546 | 3,948,643 | 2,363,900 |
| Hand stamps and stencils and brands | 361 | 1,651 | 3,673,025 | 2,545,722 |
| Statuary and art goods | 194 | 1,699 | 3,441,546 | 2,761,216 |
| Tin foil | 10 | 983 | 3,418,818 | 1,152,245 |
| Enameling and japanning | 108 | 2,125 | 3,315,694 | 1,819,613 |
| Wool scouring | 28 | 1,142 | 3,289,215 | 1,167,113 |
| Musical instruments and materials, not specified | 187 | 1,822 | 3,228,108 | 2,338,108 |
| Candles | 16 | 539 | 3,130,521 | 954,419 |
| Jewelry and instrument cases | 120 | 2,070 | 3,115,519 | 1,895,242 |
| Screws, machine | 43 | 1,667 | 3,014,112 | 1,853,634 |
| Iron and steel doors and shutters | 29 | 1,601 | 3,005,685 | 1,722,780 |
| Gold and silver, leaf and foil | 88 | 1,383 | 2,630,500 | 1,112,626 |
| Paper patterns | 27 | 921 | 2,610,714 | 1,964,744 |
| Carpets, rag | 428 | 1,982 | 2,567,569 | 1,878,948 |
| Ink, writing | 47 | 505 | 2,505,414 | 1,427,406 |
| Mats and matting | 12 | 937 | 2,431,615 | 1,365,049 |
| Furs, dressed | 93 | 1,241 | 2,390,599 | 1,580,159 |
| Artists' materials | 46 | 658 | 2,339,935 | 979.445 |
| Foundry supplies | 49 | 464 | 2,297,690 | 1,045,804 |
| Fireworks | 42 | 1,403 | 2,269,349 | 1,373,159 |
| Engraving and diesinking | 253 | 1,308 | 2,249,861 | 1,889,097 |
| Haircloth | 14 | 538 | 2,230,033 | 616,452 |
| Crucibles | 12 | 335 | 1,849,326 | 760,144 |
| Pulp goods | 14 | 783 | 1,770,107 | 799,169 |
| Oil, essential | 68 | 290 | 1,737,234 | 481,756 |
| Grindstones | 14 | 1,394 | 1,688,171 | 1,219,979 |
| Wheelbarrows | 24 | 664 | 1,625,478 | 910,601 |
| Cloth, sponging and refinishing | 57 | 975 | 1,543,872 | 1,458,669 |
| Axle grease | 38 | 176 | 1,480,811 | 652,698 |
| Graphite and graphite refining | 9 | 162 | 1,139,587 | 734,108 |
| Bone, carbon and lamp black | 27 | 228 | 1,093,494 | 648,886 |
| Bluing | 82 | 313 | 1,074,231 | 580,489 |
| Card cutting and designing | 68 | 525 | 1,031,392 | 657,279 |

| Industry | Number of Establishments | Wage Earners (Average Number) | Value of Products | Value Added by Manufacture |
|---|---|---|---|---|
| Horseshoes, not made in steel works or rolling mills | 19 | 283 | 1,014,576 | 658,722 |
| Vault lights and ventilators | 37 | 327 | 956,720 | 618,390 |
| Engravers' materials | 18 | 129 | 920,727 | 311,674 |
| Oil, castor | 4 | 54 | 904,825 | 243,647 |
| Charcoal | 76 | 631 | 872,522 | 424,945 |
| China decorating | 40 | 328 | 786,293 | 475,176 |
| Clothing, men's, buttonholes | 146 | 830 | 780,720 | 676,143 |
| Fire extinguishers, chemical | 31 | 195 | 754,165 | 449,344 |
| Engraving, wood | 82 | 318 | 711,279 | 585,178 |
| Hammocks | 15 | 272 | 578,505 | 267,259 |
| Pens, steel | 5 | 699 | 576,696 | 481,430 |
| Wood, carpenter | 10 | 184 | 490,389 | 262,654 |
| Flax and hemp, dressed | 16 | 164 | 467,346 | 131,046 |
| Oakum | 6 | 113 | 338,497 | 106,505 |
| Fuel, manufactured | 11 | 88 | 311,010 | 156,362 |
| Hones and whetstones | 18 | 152 | 267,932 | 157,935 |
| Rules, ivory and wood | 9 | 109 | 143,811 | 112,979 |
| Calcium lights | 10 | 15 | 52,216 | 28,323 |
| All other industries | 8 | 96 | 390,206 | 275,154 |

introduction in the industries of many scientific discoveries dormant in the archives of the scientist, the commercial possibilities of which have never been appreciated. It is indeed encouraging to note the awakening of a few of our industries to a realization of the possibilities which lie in a more intimate contact with our engineering schools and to know that some of our universities are eager to place the services of investigators at their disposal. The union of these two interests through the medium of properly equipped industrial laboratories is believed to be the beginning of a new era in the industrial development of this century. The patient search for scientific laws and principles underlying industrial processes and economic relations by those skilled in methods of research, and moreover the careful and judicious application to an almost limitless field of human endeavor of the already established facts and laws which have never been put to effective use, together with the preparation of highly skilled engineers capable of making and supervising these applications, will give an impetus to economic progress which the world has never seen and raise the nation fostering this ideal to a plane of civilization far beyond our fondest hopes.

WALTER RAUTENSTRAUCH

# COLLEGE ATHLETICS

COLLEGE athletics, like industry and other phases of twentieth century life, are undergoing rapid expansion and re-adjustment of values and methods. We are now in the midst of a radical re-adjustment of aims and organization. The change which is taking place is one from student and alumni control with emphasis upon victories, commercialism, and newspaper notoriety, to faculty control with emphasis upon the educational, social, and moral values of athletics for all students. In order that we may have a clear conception of the great forces now in conflict for the control of college athletics, we must consider the origin of these forces and the aims of each.

In the middle of the last century, the typical college faculty offered a uniform, prescribed curriculum, including disciplinary and cultural studies supplemented by a considerable amount of religious and ethical instruction. The curriculum provided for the intellectual and moral development of the students, but their physical development was left to fortuitous education. In response to the natural instincts of healthy young men for play, vigorous physical activity, competition, and social intercourse, the students introduced various athletic exercises and games. At first, the students in each college played among themselves; but it was not long before they sought to test their strength and skill against the students of other colleges. This was the beginning of intercollegiate athletics. Intercollegiate contests in rowing were introduced in the fifties, baseball in the sixties, and football and track athletics in the seventies. The so-called minor sports, basketball, hockey, fencing, wrestling, gymnastics, swimming, water polo, tennis, golf and soccer football were nearly all introduced during the nineties. From the beginning, athletics were frowned upon by college faculties as distracting and antagonistic to the aims and functions of a college education. The failure on the part of college faculties to recognize the tremendous possibilities of athletics for the physical, social, and moral development of young men opened the way for many of the abuses and evils that grew up insidiously until they reached a point where in some instances prohibition was considered the only adequate remedy.

When we consider the conditions under which students introduced and developed athletics, it is not surprising that the sporting and commercial spirit gradually assumed undue prominence. The introduction of contests between colleges increased the desire to attain superior skill and led to the employment of professional coaches. The chief motive of the professional athlete is to achieve victory, because victory means increased financial returns from gate receipts, allied commercial interests and gambling. Consequently, the desire for victory "at any cost" and for large gate receipts occupied a large place in the organization and administration of college athletics as developed by undergraduates without faculty supervision. While admitting that many evils and abuses resulted from athletics in which undue emphasis was placed on victory and financial returns, we should appreciate the fact that even under those conditions a large number of young men derived from athletic practice and competition real physical and moral benefits and much wholesome recreation.

A great wave of interest in health and hygienic living swept the country in the late seventies. Drs. Dio Lewis, Graham, and Winship lectured about the country on topics of exercise, diet, and temperance, and created a fad for exercise and hygienic living. A definite result of this movement was the introduction of physical training in many colleges and schools. Gymnasiums were built, instructors were employed, and classes in gymnastics were organized. The only men available as gymnasium instructors at that time were professional gymnasts and athletes who because of their low social position and lack of education were treated as janitors. Very few of these men had any knowledge of, or interest in athletics. For a period of nearly twenty years, practically all the provision made by the colleges for the physical education and recreation of students was a gymnasium (often an old building, poorly equipped and badly kept up) in charge of a janitor-instructor. During this time athletics were expanding rapidly, abuses and evils were increasing, and the friction between students and alumni on the one hand and the faculty on the other was growing from year to year.

The next period, from the late eighties to about 1900, was marked by the founding of normal schools of physical education for the professional training of teachers. College men who had achieved success in athletics were attracted to this new profession, and by 1900 about twenty colleges had well organized departments of physical education in charge of professionally trained college men. Courses in physical education including practical work in gymnastics, athletics, and swimming, and class-room instruction in hygiene were made an integral part of the college curriculum. This movement has grown so rapidly that in 1915 such courses, either prescribed or elective, were given in 95 per cent. of American colleges.

The gradual development of "athletics for education" under the auspices of college departments of physical education has furnished a solution to the perplexing problem of placing intercollegiate athletics on a rational basis. The pioneer college in this important movement was the University of Chicago, where a department of physical education was organized in 1892 with full control of all physical education activities, including intercollegiate athletics. The head of the department is Professor Alonzo A. Stagg, a graduate of Yale; and the other professors, instructors, and coaches are appointed and paid by the University. The adoption of this plan presented no difficulty in a new institution, but its introduction was necessarily slow in colleges where athletics were firmly established under student control. The new plan was adopted by a number of institutions in the middle West and gradually extended over the country. In 1910, athletics were under faculty control in 30 per cent. of American colleges and universities; by 1915, the proportion had increased to 57 per cent., and 27 per cent. more reported as in favor of the plan and working for its adoption.

One of the obstacles to the complete realization of the aim for rational athletics has been the attitude of indifference and opposition on the part of many faculty members. In the minds of some students and alumni, faculty control has implied indifference, repression, and possible prohibition of intercollegiate athletics. There is still need in college faculties of such a larger sympathetic interest in the whole welfare and development of undergraduates as will realize that the athletic field is a laboratory for manliness, honesty, perseverance, co-operation, self-restraint, and fair play. When athletics are controlled by men of such ideas, the results will be far more satisfactory to faculties, students, and alumni than they have been in the past.

Meantime the radical changes in policy shifting the emphasis from the sporting and commercial aims to the educational aims will result in the elimination of those undesirable features with which the critics of college athletics have made us familiar. The most radical critics, who have advocated the abolishing of intercollegiate athletics, have contended that athletes suffer physical injury serious enough to shorten life, and that the scholarship and morals of college students suffer because athletics constitute the dominating interest in college life. The charge that athletes suffer permanent physical injury has never been substantiated by evidence. A careful search through the many articles in which this charge is made failed to reveal any evidence to support the contention. On the other hand, several studies (Morgan's study of Oxford and Cambridge oarsmen, Meylan's study of Harvard oarsmen, and Anderson's study of "Y" men at Yale) on the effects of athletics in after life, furnish evidence that college graduates who participated in college athletics live longer than their fellow graduates (Anderson), and longer than the accepted risks of life insurance companies (Morgan and Meylan).

The other contention, that athletics are detrimental to the interests of scholarship, is made by President William T. Foster.* His indictment is based on facts gathered here and there in colleges where the sporting and commercial aims in athletics have attained undue prominence. If these aims were still the dominant aims in the majority of colleges, and if there were no forces at work to improve the situation, President Foster's proposed remedy, to suspend intercollegiate athletics for a college generation, would deserve serious consideration. Fortunately, the movement in favor of athletics for education, under faculty control, is gaining rapidly, and there is abundant justification for the hope that athletics will soon occupy a legitimate and integral place in a college education.

George L. Meylan

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* *An Indictment of Intercollegiate Athletics, Atlantic Monthly,* November, 1915.

# THE MOVEMENT FOR AMERICANIZATION

THE European war has not created the problem of Americanization, but it has revealed it to us as a vital, perhaps the paramount, issue in our public life. For now we all know what some of us have long suspected, that there are among us American citizens in law who are no Americans at heart. And we can only surmise the potential dangers to the republic in the presence within it of the masses of unassimilated aliens who dwell in the foreign quarters of our cities, in isolated industrial communities throughout the land, in labor camps, mines and quarries, most of whom have not taken even the first step toward becoming Americans even in name. From one point of view Americanization is the old American problem of union in a new form. In the past, union has weathered the storms of state sovereignty and sectionalism. Will it in the future triumph over the disintegrating forces of racial diversity intensified by industrial antagonism? The crisis at hand calls for immediate, intelligent and patriotic action, not for quiescent assurance in the success of the "American experiment." The union was not made or saved, nor will it be perpetuated, by overconfident optimists. The men of 1776 and the men of 1861 were men who could read danger signals.

The movement for Americanization is a phase of a rational patriotism which is full of hope for all friends of American democracy. The word patriotism has been so often used as a cloak for sham and selfishness, for frivolity and inertia, that a disposition is manifest in some quarters to rate it low. It cannot be denied that much has passed current among us as patriotic of which no man can approve who is both ethical and intelligent. Dr. Johnson's epigrammatic definition still describes some varieties of American "patriotism." But the American people as a whole happily is rising to a higher conception of patriotism. That smug complacency and that boastful arrogance upon which foreign critics, much to our indignation, used to comment are ceasing to be American traits. Our environment is changing. The frontier has disappeared, and that free and almost fierce individualism, itself a product mainly of the frontier, has undergone modification. "Each for himself" and "Devil take the hindmost" seem sentiments unworthy of grown-up men and women. As a people we are no longer as confident of our destiny as formerly; we are not so sure that God has singled *us* out as his chosen people. A sense of uneasiness is creeping over us, a feeling that all is not well with the land we love. Those who can think know that national progress is not predestined, but dependent upon human will and human effort. It is no longer true, as Mr. Godkin complained twenty years ago, that patriotism consists in holding everything that is to be exactly right, that the critical man is set down as unpatriotic. On the contrary some of us, verging to the opposite extreme, are ready to see a saviour of society in any man, if only he asserts loudly enough that he is very critical and very radical. Most critics and reformers in history have looked back to find their ideals, whether to the near past, the remote past, or the Garden of Eden. To-day they insist that they are looking forward. Mr. Chesterton may have the hardihood to lift up his voice in protest against the *Zeitgeist;* but, among "intellectuals" at least, it is the voice of "Athanasius contra mundum." It is the author of *A Modern Utopia* and *The New Machiavelli* who finds himself in tune with the spirit of his times. Novelty, or at least the appearance of novelty, is an asset which discreet reformers cannot afford to forego. Witness the *New Nationalism,* the *New Freedom,* the *New History,* the *New Republic,* the *New Statesman.* In danger we may be of falling a prey to the "damnable heresies" of false prophets; but at any rate we are learning, what is the breath of life for democracy, the art of popular self-criticism. It is the distinction of Theodore Roosevelt that he was one of the first public men in America to voice and to spread a loftier conception of patriotism. "Let us remember," he said at the Conference on Conservation in 1908, "that the conservation of our natural resources, though the gravest problem of to-day, is yet but part of another and greater problem to which this nation is not yet awake, but to which it will awake in time, and with which it must hereafter grapple, if it is to live—the problem of national efficiency, the patriotic duty of assuring the safety and continuance of the nation." We hear so much on all sides to-day of the need of military preparedness that we are in some danger of forgetting that this is not the only preparedness, that it is but one phase, and not the most important, of that movement for "national efficiency" which is the essence of rational patriotism. History affords many cases of nations diverted from internal reform by wars and rumors of wars. The advocates of military preparedness in the United States will have wrought irreparable injury to this nation, if they turn its attention away from those portentous domestic problems upon whose solution its continued existence so largely depends.

Americanization in its broadest sense is a problem of education, the education of foreign-born and native-born, of the new American and the old American, in higher ideals of citizenship and truer standards of patriotism. If we approach it as rational patriots, we shall confess, contritely but frankly, that as a nation we have slept altogether too long upon it. Blindly confident of our capacity to absorb unlimited immigration by doing nothing about it, unheeding the occasional voice raised in warning, we have grossly overtaxed our powers of assimilation and find ourselves suffering in consequence from acute social indigestion. We can no longer deny that an unhealthy condition exists, a condition full of peril to our social standards, our industrial progress, the quality of our citizenship, and even to our existence as a nation. In the past we have been content to close our eyes to the problem, dignifying our inaction by calling it *laisser faire*. It is worse than futile to go on repeating old and idle formulas, such as "restriction of immigration is un-American," "the public schools will solve the problem," "adherence to traditional policy." Nero fiddling while Rome was burning is not an example for patriotic or even for prudent people.

The native American, discovering symptoms of disloyalty to the United States in its alien population, fails as a rule to recognize his own share in producing that disloyalty. The lately arrived immigrant, he argues, is an ungrateful fellow, who does not appreciate his blessings in this land of the free. We keep a melting-pot working overtime for his benefit, but he obstinately refuses to be melted. Among our national preconceptions none is more prevalent than the notion that our treatment of the immigrant is a model of enlightened liberality. Such is not the opinion of those who have given most thought to the subject. Frances Kellor, Editor of the *Immigrants in America Review,* writes:

"America's policy regarding naturalization has been to place the burden on the foreigner, to make naturalization difficult rather than to facilitate his efforts to become a citizen by making the procedure simpler while keeping the standards high. . . . We set a requirement that an alien shall have a knowledge of English before he can become a citizen, but make little provision for teaching it; we require a knowledge of the Constitution, but isolate the immigrant in the labor camp where he has no opportunity to learn its provisions. Our naturalization procedure is adapted to the stationary workman, yet our seasonal labor requires his constant removal from place to place, thus delaying his chance to become a citizen. . . . We have built up through race prejudice and the conditions of our industrial life barriers that the immigrant finds it difficult to cross."

It may be added that we have permitted him to be fleeced by the "padrone," the "loan-shark" and the medical quack, have denied him employment on public works, have enacted anti-alien labor laws against him, and have permitted systems of peonage to grow up which virtually enslave him. Is it fair, then, to reproach him because he fails to appreciate the message conveyed by the Statue of Liberty? We shall never get this alien question settled until we abandon preconceptions and face facts.

One essential of solving a difficult problem is not to underestimate its difficulties. The obstacles in the way of Americanization are so great that we can only hope they are not insuperable. To say nothing of popular inertia, prejudice and self-interest, all powerful hindrances, we have to reckon with the distressing fact that we as a nation have not really set to work to Americanize ourselves. Americanization, as has been remarked, is a problem of education. We have adopted as a national doctrine the principle of compulsory elementary education at public expense. But we have only just begun to use our public schools to train our boys and girls in citizenship. Political thinkers have long recognized that self-government must depend for its success upon popular education. Montesquieu taught that education serves a peculiar purpose in domocracies, its chief aim being the cultivation of "virtue," which he defined as "a constant preference of public to private interest." "It is in a republican government," he wrote in the *Spirit of the Laws,* "that the whole power of education is required." In an essay of remarkable penetration, though of little fame, entitled *The Education of the Middle Classes,* written on the occasion of the enactment of the Reform Bill in 1832, Dr. Thomas Arnold, father of Matthew Arnold, exposed the gravest peril of democracy.

"Every man has two businesses, the one his own particular profession or calling, . . . the other his general calling, which he has in common with all his neighbors, namely, the calling of a citizen and a man. . . . But because every man must do this second business, whether he does it well or ill, so people are accustomed to think that it is learnt more easily. A man who has learnt it indifferently seems, notwithstanding, to get through life with tolerable comfort . . . whereas, a man who has learnt his other business indifferently, I mean his particular trade or calling, is in some danger of starving outright. . . . Thus it is that while ignorance of a man's special business is instantly detected, ignorance of his great business as a man and a citizen is scarcely noticed, because there are so many who share in it. . . . Never was the proverb more fulfilled which says that every man's business is no man's. . . . This general ignorance does not make itself felt directly,—if it did, it were more likely to be remedied; but the process is long and round about; false notions are entertained and acted upon; prejudices and passions multiply; abuses become manifold; difficulty and distress at last press on the whole community; whilst the same ignorance which produced the mischief now helps to confirm it or to aggravate it, because it hinders them from seeing where the root of the whole evil lay, and sets them upon some vain attempt to correct the consequences, while they never think of curing, because they do not suspect, the cause."

How true this is we are just finding out. It is not by initiative and referendum, recall of judges, short ballot, direct primaries, or woman suffrage that democracy will attain salvation. These things are means, not ends. None of them, nor all of them together, will avail, unless behind them is intelligent public spirit and rational patriotism. In the Annual Report of the Education Department of the State of New York for 1912 the subjects taught in the secondary schools were classified in three groups "as regards the purposes sought to be accomplished by their study." These were (1) training subjects, the principal purpose of which is to afford mental discipline; (2) cultural subjects, intended to develop the imagination and extend the interests; (3) vocational subjects, which will be of direct use to the pupils in their life work. Not a word here of civic training, not an intimation that the community is responsible for providing education in what Dr. Arnold termed "the calling of a citizen." We can do little, indeed, toward Americanizing our alien population, if we cannot teach them by example as well as by precept.

Nor must we be unmindful of those obstacles to Americanization which are due to our political system. There is a common American citizenship. The Federal Government prescribes the rules of admission to it; the Naturalization Law requires of the alien ability to speak English and an "attachment to the principles of the Constitution." In other words, it establishes what is virtually an educational qualification. But we have no common national educational system, nor can one be established so long as public education remains an exclusive function of local government. The Federal Bureau of Education cannot exercise administrative authority; it serves merely as a clearing house of information for those agencies which are actually engaged in educational work. Whatever may be said for the control of education by local authority, it must be admitted that it hinders the carrying out of an effective, nation-wide program of Americanization.

But despite the numerous obstacles to be overcome, a beginning has been made in the civic education of both native-born and foreign-born. It was in the colleges and universities that the study of politics and government, and of the allied subjects of sociology and economics, had its origin. A few years ago the public schools in those states where more enlightened educational policies were pursued began to include courses in civics in their curricula. Civic education, of course, means far more than mere formal instruction in government and the rights of citizenship, unrelated to the life and experience of the pupil. Several cities have perceived the need of "vitalizing" civics by showing the pupil the meaning to him of his own community life; and of late there has come a recognition of the possibility of organizing the work of the school as a whole so as to afford valuable and continuous apprenticeship for the later work of active citizenship. Personal participation of pupils in school government has been tried, often with conspicuous success, as a means of education, in the belief that it fosters the self-restraint, sense of responsibility, and public spirit essential to good citizenship. Though some of these experiments have failed, they are based upon the sound principle that good citizenship cannot be attained by the acquisition of civic knowledge alone, but must be practiced as an art. In the better colleges and universities politics is no longer taught as a mere part of an academic curriculum, but is closely related to public life and public service. The need of some degree of cooperation among the numerous agencies concerned in civic education has become apparent, and two years ago a committee of the National Municipal League on Civic Education proposed the creation of a central bureau of information for all those interested in the problem. A Division of Civic Education was accordingly established in the Bureau of Education to perform this service.

Thus the education of the immigrant in American citizenship is but part of the larger process of Americanization. It has, however, special problems all its own. The alien child and the native-born child of foreign parentage who attend the public schools receive the same training as the American child, so that in their cases no special problem arises, if the schools succeed in putting civic education in general on a satisfactory basis. But the education of the adult alien offers several special difficulties. The voluminous Report of the Federal Immigration Commission published in 1911, the great store-house of information upon immigrant conditions, contains no material on this very important subject. Dr. H. H. Wheaton of the Bureau of Education has, however, written several articles and reports which give it a general survey, and the recently established Division of Immigrant Education at Washington is collecting information upon it. Ability to use the English language is the indispensable preliminary to Americanization, both civic and industrial. The census of 1910 showed 11,653,925 foreign-born whites over twenty-one years of age in the United States, of whom 2,565,612 were unable to speak English, and 1,546,535 were illiterate. In view of these figures it is not very encouraging to learn that 35,614 only were recorded as attending school.

There are several reasons why the public schools are doing little to instruct the adult alien in English. In most cities evening school facilities are inadequate. In New York, the largest of the "immigration states," where the maintenance of public evening schools is optional with the local boards of education, nineteen cities with a foreign population of between 1,000 and 7,000 each conduct no public evening classes where immigrants can learn English. But even where facilities are at hand it is exceedingly difficult to get the non-English speaking alien into the schools. Massachusetts, indeed, makes attendance at school compulsory for illiterate minors between the ages of fourteen and twenty-one, the vast majority of whom are, of course, aliens. But other states have not as yet followed its example. "The crux of the problem," writes Dr. Wheaton, "is how to get the newcomer in the public schools before long residence here has destroyed his desire to learn English." If he settles in a foreign quarter of one of our great cities, where he can find neighbors to talk to, newspapers and books to read, and even lectures to hear in his mother tongue, he is likely to be lost, so far as Americanization is concerned. The path of least resistance for the alien is to remain an alien. An unusual degree of vigor and enterprise is necessary to lead him to school at night after a hard day's work has fatigued his body and dulled his mind. America, he has heard, is a land of equal opportunity for all; but he finds that this opportunity can be grasped, if at all, only at the expense of rest and recreation which he sorely needs. Nevertheless it has been shown in several cities, notably in Detroit, where a systematic campaign was carried on last autumn to make English the universal language of the city, that aliens can be got to school in far greater numbers than some people had supposed. The adult immigrant, furthermore, is not infrequently discouraged and repelled by his experience at the night school. The use of text-books unsuited to his needs, the employment of untrained teachers, and of those whose only interest in their work is to augment an insufficient wage, and a faulty grouping of students whereby men and women of considerable education find themselves in the same class with illiterates,—these are some of the reasons why the ambitious and intelligent alien often finds his efforts to Americanize himself baffled, and abandons his praiseworthy enterprise.

Beyond instruction in English very few cities have adopted any plan for the civic education of the adult immigrant. In general the teaching of civics, where it is undertaken at all, must be pronounced in a chaotic condition. "In general it may be said," to quote Dr. Wheaton again, "that the states have no well-developed policies with reference to immigrant education. Only those states where the size of the problem has compelled action have taken any definite steps at all. The cities are advanced in some cases and great laggards in others. . . . Inadequate public school facilities, lack of standardization in legislation, administration, and instruction show the need of a national awakening to the importance of the subject."

On the other hand, private agencies and organizations in astonishing number throughout the land, philanthropic, patriotic, religious or industrial in character, are concerned, to a greater or less extent, with the education of the adult alien. They are supported for the most part by private subscription. Some of them are cosmopolitan in the scope of their educational activities, others work exclusively among aliens of a single nationality. According to their lights they are, for the most part, working at the problem of assimilation. Though there are among them organizations which obstruct the process by perpetuating the languages and customs of other lands, a few of which are actually maintained by foreign governments, nevertheless these pioneers of Americanization have proved on the whole of great value and have often by example pointed the way to action by the local educational authorities. In their work as a whole, however, there can be no unity of policy or method, and but little cooperation. To leave Americanization permanently in their hands, however enterprising and benevolent they may be, would be not much less absurd than to turn over the determination of our foreign policy to college debating societies or to entrust the building of dreadnoughts to charitable institutions.

As a national issue Americanization is in its infancy, for it was the war in Europe that first raised it to this dignity. In 1914, following the lead of Cleveland, a number of cities in order to emphasize the importance of naturalization instituted public receptions to their newly admitted citizens. Early in 1915 the *Immigrants in America Review,* the organ of the new movement, was established. On May 10th, 1915, President Wilson addressed a body of new American citizens, assembled in the city of Philadelphia, upon the meaning and the duties of American citizenship. In the same month the National Americanization Committee was formed for the purpose of making the Fourth of July "Americanization Day." As a result of this agitation one hundred and six cities held citizenship receptions upon that day. The committee, with headquarters in New York City, has become a permanent organization and aspires to serve as the central clearing-house and bureau of information for all agencies and institutions, public and private, concerned in the movement. It aims to extend the teaching of English to foreigners, to encourage and facilitate naturalization, to improve industrial conditions, and to spread the American standard of living.

From this movement the American universities cannot hold aloof. Already several of them have established courses for the technical training of those who are preparing themselves for careers of service among immigrants as teachers, inspectors, investigators, interpreters, or nurses. And now Columbia, true to its tradition of advancing the public good, has gone to the aliens to teach Americanism. In his last annual report President Butler called attention to the inadequate facilities for the education of the adult immigrant and recommended the organization through extension teaching of a definite program of study "to prepare the adult alien for American citizenship." A new center of extension teaching has accordingly been established on the Lower East Side at Stuyvesant and Ninth Streets, where a series of special courses was begun in February and will be conducted throughout the present academic term.

The courses have been planned to meet the needs of busy and serious-minded men and women of foreign birth who expect to become naturalized and are anxious to gain an insight into the privileges and responsibilities of American citizenship. In addition to the teaching of English, instruction is offered in American citizenship and government, American history, and practical economic problems. The course in citizenship aims to explain the American system of government in city, state and nation, but lays the chief emphasis upon the rights and duties of the citizen. American history is presented as the unfolding story of the life of the American people, the historic setting of the events and movements of the present. Since the public questions of the day upon which the voter is called upon to register an opinion are so largely economic, it was thought desirable to include in the offering a course dealing with those great economic problems whch confront our generation. A fee has been arranged low enough to bring the courses within the reach of all who care enough for knowledge and training to pay *something* for it. Special lectures will be delivered at the new center upon various aspects of citizenship by men actively engaged in public life. The project has been warmly endorsed by the foreign-language press of the city and by organizations and individuals already working in the same field.

This experiment in democratic education which Columbia has inaugurated is as yet in its infancy and it is all too soon to speak of it in terms of positive achievement. The policy of the University, however, may be briefly stated. It will not "compete" with other organizations. Americanization is no field for the operation of the petty methods of commercial competition. It demands cooperation, and it is in the spirit of cooperation that Columbia joins the movement. Instruction is carried on by discussion rather than by lecture. The intelligent adult soon tires of, if he does not positively resent, an endless round of lecturing. Throughout all education runs the distinction between those who are eager to learn and those who merely consent to be taught, between active and passive students. All teachers are aware of this distinction, though educational administration seldom recognizes its existence. Only those who belong in the category of active students, whose minds are inquiring, not purely receptive, will seek the university. They demand and must receive opportunity to discuss what they study. Columbia emphasizes the strictly educational character of its work. It has no axes to grind, and will carry on no propaganda, whether racial, political, religious or industrial. Nor was its enterprise conceived in a spirit of "social uplift," in the sense in which that expression is commonly used. It does not believe that Americanization can or should be left to philanthropy. The "American experiment" was not launched and it will not be floated by the recipients of private charity. The men of "'76" were men who knew how to take their own part; they were not the beneficiaries of "social uplift."

A new meaning is given to that old American motto *e pluribus unum*. In the days of our forefathers is expressed the aspiration of those who would make a nation out of a group of discordant political communities. For us too it represents an aspiration. The task before us, as great and as inspiring as that which confronted the generation of Washington and Hamilton, is to unite into one people the multitude of diverse races that have made their homes in this broad land, so that there shall be here no German-Americans, nor Irish-Americans, nor Italian-Americans, but only Americans, knit together by a common language, a common loyalty and a common devotion to those ideals that make America still what Thomas Jefferson called it, "the world's best hope."

ROBERT LIVINGSTON SCHUYLER

# EDITORIAL COMMENT

**The Degree of Master**

At its December meeting the University Council authorized the acceptance of candidates for the degree of Master of Science by the Faculties of Medicine, Applied Science and Practical Arts and by the Administrative Board of the School of Architecture. Hitherto candidates for the Master's degree pursuing advanced work in subjects assigned to the professional schools of the University have matriculated under the Faculties of Political Science, Philosophy and Pure Science and have been subject to their jurisdiction. Hereafter such students will matriculate only under the appropriate professional faculty. Although this change was the immediate result of the need of some rearrangement of graduate work in the Schools of Mines, Engineering and Chemistry, it is significant of an important change in university organization. The committee in charge, in studying the matter, were of the opinion that the time had come when specific provision should be made for furthering graduate study in the professional schools of the University. When graduate work in the University was organized, and for many years thereafter, the professional schools of the University were not in a position to offer advanced instruction except in very few departments. As a result, the professors in charge of such work were assigned to seats in one of the non-professional graduate faculties in the hope that the advanced work might thus be encouraged and extended. This work has grown so effectively that it has now become an integral part of the work of the professional schools themselves. The demand for opportunities beyond those afforded by the preliminary professional degree has steadily grown, on the part of both students and faculty. As was pointed out by Dean Russell in the discussion of the matter, professional schools constantly face the alternative of raising entrance requirements or providing for advanced instruction. To do the former is often to neglect the demands which society makes upon the University by providing a course of instruction in advance of the professional demand. To do the latter is to afford an opportunity for the exceptional student. The action of the University Council is thus to be understood as a recognition not only of immediate needs in the organization of the University itself, but also of the relation of its work both to the demands of the public and to the progress of advanced instruction in professional subjects.

F. J. E. W.

**John Angus MacVannel**

John Angus MacVannel, professor of the Philosophy of Education in Columbia University, died at his home in St. Mary's, Ontario, on November 10, 1915. His service to the University began in 1896, when he was appointed assistant in philosophy and education.

It is one of the misfortunes of a large university that many of its choicest spirits may be almost unknown to their colleagues. Professor MacVannel, owing partly to his long illness and partly to his preference for the quieter paths of scholarship, was a stranger to most of his fellows excepting only those with whom he was most closely associated in his work.

He was one of the few among us who preserved the tradition and the flavor of the typical college professor of the best type of a generation ago. Absorbed in scholarship, kindly, personally interested in the welfare and progress of each of his students, unworldly, a man of the highest ideals and the highest character, he was, in the language of an earlier day, a perfect Christian gentleman.

A. L. J.

**A New Form of Gift from Alumnæ**

A study of fire prevention, to be directed by the Pennsylvania Department of Labor and Industry, has been given by a group of Bryn Mawr alumnæ. They have selected for their field Pennsylvania industrial establishments employing women and girls, and for their investigators Miss Fanny Travis Cochran (Bryn Mawr, 1902) and Miss Florence Lucas Sanville (Barnard, 1901), whose joint social research is already known widely. This gift from educated women to the public found its occasion, of course, in a particular social danger; but its impulse is of general social significance. "Natural and almost inevitable," says the announcement of the committee, "as the proposed relationship between a group of citizens and the state would seem to be in a democracy, it is said that no similar movement is on record in the United States."

**The School of Business**

The usefulness of Extension Teaching in the development of the University is well illustrated in the organization of a School of Business which was authorized at the meeting of the Board of Trustees in January last. For the past four years, evening and late afternoon classes in business have been maintained with increasing interest and success. In fact, a school of business has been in existence under the fostering care of Extension Teaching and has grown to such stature as to deserve an identity all its own. This school enters the University system with an organization embodying the educational theories which Columbia in its recent development has shown to be its own. Founded on the collegiate course of two years, this new professional school is to have three years, two of which complete the undergraduate career. The third year offers advanced work in this field and synchronizes with the theoretical graduate courses of the School of Political Science through which the student may reach the most advanced study and highest degree offered by the University.

J. C. E.

**General Assemblies**

A General Assembly of the Faculties of the University was called for the evening of October 15, 1915, by the President. This was the first meeting of the kind held at Columbia in a quarter century and had for its object the consideration and discussion of the more effective organization and conduct of research in professional subjects, such as law, medicine, engineering, and teaching, and the relation of this work to advanced study and research in non-professional subjects. The subject was presented in ten-minute addresses by Deans Woodbridge, Russell, and Goetze, after which it was thrown open for general discussion under the ten-minute rule. The discussion was opened by Professor E. B. Wilson. Brief statements regarding plans for new work were made as follows: instruction in preparation for official public service, by Professor Beard; instruction in preparation for work in sanitary science and public health, by Dean Lambert.

A second General Assembly was called by the President for January 13 in the Horace Mann Auditorium in honor of the delegates to the Second Pan-American Scientific Congress. In addition to an address by the President of the University, addresses were made by Dr. Ernesto Quesada of Argentina, Dr. Rodrigo Octavio of Brazil, Dr. Julio Phillippi of Chile, Dr. Luis Anderson of Costa Rica, and the Honorable

Seth Low, President of the Chamber of Commerce of the State of New York.

A third General Assembly was called by the President for January 14 to meet at the Medical School to inspect the teaching and research laboratories, the Sloane Hospital for Women, and the Vanderbilt Clinic. Brief addresses were made by Dean Lambert and by Professors Francis Carter Wood, George S. Huntington, and Adrian V. S. Lambert. After these the Assembly broke into groups and visited the several departments to see demonstrations of methods and apparatus peculiar to medical research as conducted by the College of Physicians and Surgeons.

The revival of the custom of holding a General Assembly has been most favorably received by the University. It is accepted as a plan whereby University problems may be discussed from a general point of view rather than from that of faculty or department interest. The General Assembly may well become a body before which questions dealing with education or with University policy will be presented and where the annual reports of the President and other officers of the University will be discussed. It may very well become a forum for the discussion and crystallization of University opinion and pave the way for concerted University legislation.

F. D. F.

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**Edward Van Dyke Robinson**

When the staff of a University totals nearly a thousand men and women, the ranks must of necessity be frequently broken by death. None the less we are seldom, if ever, prepared for the shock when it comes, and were never less so than upon the sudden death of Professor Edward Van Dyke Robinson on December 10. The few short weeks during which he was a member of our academic family had given such bright promise of the place he would take in the affection and esteem of students and colleagues alike that his death has been in a very real sense a bereavement.

F. P. K.

# UNIVERSITY LEGISLATION

## THE TRUSTEES

### DECEMBER MEETING

**General Administration.**—(24) The President reported the death, on November 10, of John Angus MacVannel, Ph.D., Professor of the Philosophy of Education.

(25) The thanks of the Trustees were tendered:

To the following donors for their gifts toward the Maintenance Fund of the Deutsches Haus: Anonymous, $250; Edward D. Adams, $200; Felix M. Warburg, $100; Otto H. Kahn, $100; Gottfried Piel, $100; Dr. Willy Meyer, $100; Jacob Hasslacher, $50; Herman Behr, $50.

To the anonymous donor of the sum of $200, to be applied toward current expenses in the Department of Bacteriology.

To Messrs. Klaw & Erlanger for their gift of a model to be added to the equipment of the Dramatic Museum.

(26) Upon the request of the Faculty of the College of Physicians and Surgeons, it was resolved that the College hereafter be designated in all official publications issued by or under authority of the Trustees, as "The School of Medicine of Columbia University" or "The Medical School"; and that the use of the title "Medical Department of Columbia University" be discontinued.

(27) Upon the recommendation of the Medical Faculty, the term Urology was substituted for Genito-Urinary Diseases in all official legislation and publications.

**Financial Administration.**—(28) The Budget, as adopted March 1, 1915, was amended in regard to the Offices of the Registrar and the Bursar and to the Departments of Anatomy, Physics and Physiology and the Summer Session.

**Educational Administration.** — (29) Leaves of Absence.

*For the second half of the academic year 1915–16:*

Lea McI. Luquer, Ph.D., Assistant Professor of Mineralogy.

Henri F. Muller, Assistant Professor of Romance Languages and Literatures.

(30) Appointments.

Ellwood P. Cubberley, Ph.D., to be Visiting Professor of Education.

Andres Perez, to be Lecturer in Spanish.

W. M. Stempel, M.S., to be Assistant in Physics.

R. W. Mumford, to be Assistant in Chemical Engineering.

(Upon the recommendation of the Medical Faculty.)

Frank Warner Bishop, M.D., to be Assistant in Clinical Medicine at St. Luke's Hospital.

(Upon the recommendation of the George Crocker Special Research Fund.)

Dudley H. Morris, M.D., to be Assistant in Cancer Research.

(31) Assignments.

Edward Van Dyke Robinson, Ph.D., Professor of Economics, to a seat in the Faculty of Political Science.

Benjamin B. Kendrick, Ph.D., Assistant Professor of History, to a seat in the Faculty of Political Science.

### JANUARY MEETING

**General Administration.**—(32) Elections:

Chairman, Mr. Rives; clerk, Mr. Pine.

To succeed Mr. Sands on the Committee on Finance: Mr. Dodge.

To succeed Mr. Coudert on the Committee on Honors: Judge Ingraham.

To succeed Mr. Dodge on the Committee on Education: Mr. Bangs.

To succeed Mr. Sloane as a Trustee of the University: Mr. Newcomb Carlton.

(33) The President reported the sudden death, on Friday, December 10, 1915, of Edward Van Dyke Robin-

son, Ph.D., Professor of Economics, in his forty-eighth year.

(34) The thanks of the Trustees were tendered:

To Mrs. William Douglas Sloane for her gift of $75,000 to be added to the endowment fund of the Sloane Hospital for Women.

To Benjamin B. Lawrence, of the Class of 1878 School of Mines, and to Gano Dunn, of the Class of 1891 School of Mines, for their generous gift of $2,500 to purchase equipment for the Schools of Mines, Engineering and Chemistry.

To Homer E. Sargent, of Chicago, for his gift of $1,000, to be used in carrying on special work in the Department of Anthropology.

To Mrs. Adolph Ladenburg, of Aiken, S. C., for her gift of $1,000 toward the Medical School Removal and Rebuilding Fund.

To the anonymous donor of the sum of $400, to be applied toward salaries in the Department of Practice of Medicine.

To Paul M. Warburg, of New York, for his gift of $250 for the Maintenance Fund of the Deutsches Haus.

To Nathan Sulzberger, of New York, for his gift of $75 toward equipment in the Department of Chemical Engineering.

(35) The resolution of the University Council, authorizing the acceptance of candidates for the degree of Master of Laws by the Faculty of Law and for the degree of Master of Science by the Faculties of Medicine, Applied Science and Practical Arts and by the Administrative Board of the School of Architecture, was approved.

(36) The creation of a School of Business, under the management and control of the Administrative Board of Extension Teaching with the conditions of admission and curriculum as outlined by the University Council, was approved.

**Financial Administration.**—(37) The Budget, as adopted March 1, 1915, was amended by certain rearrangements in the Departments of Botany, Economics and Geology.

**Educational Administration.** — (38) Elections to the University Council.

(From the Faculty of Applied Science):

Charles E. Lucke, Ph.D., Professor of Mechanical Engineering, to succeed Professor Henry S. Munroe, retired.

(39) Appointments.

Robert M. Raymond, E.M., 1889, to be Professor of Mining.

Bela Hubbard, B.S., to be Assistant in Palaeontology, pending the return of Dr. Fritz Berckhemer, detained as a prisoner of war in Europe.

Henry F. A. Meier, to be Assistant in Botany, vice Roy C. Faulwetter, resigned.

(Upon the nomination of Barnard College):

Hester M. Rusk, A.B., to be Assistant in Botany.

(Upon the nomination of the Medical Faculty):

*Bacteriology*

Malcolm McBurney, M.D., Instructor.

*Biological Chemistry*

Sydney D. Kramer, B.S., Assistant.

Walter M. Kraus, M.D., Instructor.

*Gynecology*

Samuel Swift, M.D., Instructor (vice Condict W. Cutler, Jr., M.D., resigned).

*Neurology*

Archibald P. Evans, M.D., Instructor in Electro-Diagnosis and Electro-Therapeutics.

Randal Hoyt, M.D., Instructor.

Charles A. McKendree, M.D., Instructor.

*Pharmacology*

Wythe Mumford Rhett, M.D., Instructor.

(40) Changes of Title.

Marion L. Richards, A.M., now Instructor in Botany, to be Lecturer in Botany.

(41) Assignment.

Robert M. Raymond, E.M., 1889, to a seat in the Faculty of Applied Science.

### FEBRUARY MEETING

**General Administration.**—(42) The reports of the Committees on Education and on Buildings and Grounds, accompanying recommendations for the Budget of 1916–17, were presented and under the rule referred to the Committee on Finance.

(43) The thanks of the Trustees were tendered:

To the anonymous donor of the sum of $10,000, to be expended in surgical research and surgical pathology.

To Mr. George Ehret, of New York, for his gift of $2,000 toward the Maintenance Fund of the Deutsches Haus.

To the anonymous donor of the sum of $1,385, to be applied toward salaries in the Department of Pharmacology for the academic year 1915–16.

To the Class of 1905, College and Science, for their gift of the sum of $1,049.77, to constitute the Class of 1905 Decennial Fund.

To the Germanistic Society of America for their gift of $600 toward salaries in the Department of Germanic Languages and Literatures.

To Mrs. Helen Hartley Jenkins, Mr. Adolph Lewisohn and Mr. Henry Sharp for their gifts of $500 each, to be applied toward the salary of an Instructor in Extension Teaching in Practical Penal Problems.

To William G. Low, Law 1867, for his gift of $250, to be used for the purchase of books on maritime and international law.

To the anonymous donor of the sum of $208.34, to be applied toward salaries in the Department of Pharmacology.

To Harry Harkness Flagler, of the Class of 1897, for his gift of $150 for the use of the Department of Music.

To the Association of the Alumni of Columbia College for their gift of $100 for the equipment of the Columbiana Room.

(44) The revisions of the Statutes and By-Laws, prepared by the Special Committee on Revision, were adopted.

(45) The President presented the report of the Vanderbilt Clinic for the year ending December 31, 1915, showing a balance on December 31, 1914, of $3,334.21; total receipts during the year 1915, $59,731.71; expenditures, $50,585.53; balance, December 31, 1915, $9,146.18.

(46) The President presented the annual report of the Sloane Hospital for Women, showing a deficit on January 1, 1915, of $1,459.75; receipts, $96,867.16; expenditures, $100,054.97; deficit December 31, 1915, $4,647.56. Number of patients, 2,667.

**Financial Administration.**—(47) The Budget, as adopted March 1, 1915, was amended by certain rearrangements in the Department of Philosophy and the Library.

**Educational Administration.** — (48) Resignation:

Gorham Bacon, M.D., as Professor of Otology.

(49) Leave of Absence:

Edwin R. Smith, A.B., Librarian of the Avery Library.

(50) Retirements:

*On June 30, 1916*

Francis M. Burdick, LL.D., Dwight Professor of Law.

William H. Burr, C.E., Professor of Civil Engineering.

Adolphe Cohn, LL.B., A.M., Professor of the Romance Languages and Literatures.

George W. Kirchwey, LL.D., Kent Professor of Law.

*On October 1, 1916*

William M. Sloane, LL.D., Seth Low Professor of History.

(51) Appointments:

Raymond Dodge, Ph.D., Professor in Wesleyan University, to be Non-Resident Lecturer in Psychology.

Alexander T. Martin, M.D., to be Instructor in Pharmacology.

Archibald McIntyre Strong, M.D., to be Instructor in Clinical Medicine, vice Dr. Fraser, resigned.

Euen Van Kleeck, M.D., to be Instructor in Physiology.

James C. Egbert, Ph.D., to be Director of the School of Business.

(Upon the recommendation of the Administrative Board of Extension Teaching):

*American Institute of Banking Courses*

Walter C. Clark
F. W. Ellsworth
C. W. Gerstenberg
Charles F. Miner
O. Howard Wolfe

*Arabic*

Rashed Abu Kesm

*Chemistry*

Jesse W. Stillman

*Economics*

C. H. Chase

*Electrical Engineering*

F. R. Keller

*English*

Helen R. Diller

*German*

Erwin W. Roessler

*Latin*

E. S. Buchanan

*Mathematics*
Glenn James
*Penmanship*
Horace G. Healey
*Politics*
Leon Fraser
*Portuguese*
John Lee Bruce
*Spanish*
Emilio Agramonte
Lawrence A. Wilkins

### *Administrative Board of the School of Business*

Professor James C. Egbert, Director; Deans Woodbridge, Goetze, Keppel and Gildersleeve; Professors Seligman and McBain.

### *Administrative Board of the Summer Session*

Professor James C. Egbert, Director; Deans Woodbridge and Gildersleeve; Professors A. H. Thorndike, Zinsser, Bigelow and Monroe.

### *Administrative Board of Extension Teaching*

Professor James C. Egbert, Director; Deans Woodbridge, Keppel and Gildersleeve; Professors Hayes, Stowell and Bigelow.

(52) Appointments Confirmed:

In accordance with the provisions of Section 4 of the agreement between Columbia University and Teachers College:

David Snedden, Ph.D., to be Professor of Education.

Albert A. Méras, Ph.D., to be Assistant Professor of French.

(53) Assignments:

David Snedden, Ph.D., Professor of Education, to a seat in the Faculty of Education.

Albert A. Méras, Ph.D., Assistant Professor of French, to a seat in the Faculty of Education.